

# ePOWER charger

**Enerdrive**  
DRIVING YOUR ENERGY NEEDS



# 3

**BANK  
MULTI-STAGE  
CHARGER**

**12Volt / 20amp - 40amp - 60amp - 120amp\* (2 x 60amp units)**  
**24Volt / 30amp - 60amp\* (2 x 30amp units)**

## THE PERFECT CHARGING SOLUTION

**Lithium, Flooded, AGM Or Gel Batteries**



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DRIVING YOUR ENERGY NEEDS

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# ePOWER charger

## ePOWER Charger Features

- **Multistage Charging:** Fully automatic multistage battery charger with the ability to charge 3 separate battery banks.
- **Separate Battery Banks:** Isolated charging design where battery bank one is separate from battery bank two and three.
- **Programmable:** Battery bank 1 can be programmed with a different charge algorithm over banks 2 and 3.
- **Current Control:** User adjustable current output (e.g. Dial the 60amp unit back to run off a 1kVA generator).
- **Smart Charging:** The ePOWER battery charger will regulate its output based on the loads connected to your battery banks.
- **Wide AC Input Range:** Operates on both 110V / 60Hz and 240V / 50Hz.
- **LED Display:** Easy to use "set and select" menu along with scrolling charger status.
- **Silent Mode:** Disables the cooling fan for total silent operation at night or whenever required. Activation reduces charge output by half and locks out fan for 12 hours.
- **Temperature Sensor:** Battery temperature sensor included with 3 meter cable.
- **2 Year Warranty** from an Australian company renowned for customer support.



## The Display Panel

The ePOWER Charger display gives you all the information you need for the operation of your charger. At a glance, key information such as charger amps, battery voltage and charge state continually alternate on the screen. When in float / power supply mode, the load amps are displayed so you can see exactly what the charger is doing. The display also allows you to program all settings of the charger, as well as activate the silent mode.

**Silence when you need it** – By pressing the "SEL" button for 5 seconds, the ePOWER Charger enters the 'Silent' mode that prohibits the fan from working. This ensures totally silent and safe operation at night, ideal if the charger is located close to your sleeping quarters. Silent mode limits current output to no more than 50%, and is programmed to remain on for 12 hours before automatically returning to a normal 'fan-on & full output' setting.



Charge Current

Charge Stage

Charge Voltage

Charger with Silent Mode On

## Multistage Charging Process

The Enerdrive ePOWER Battery Charger is a fully automatic, "set and forget" charger. It is designed to quickly and accurately recharge your batteries using algorithms that help maximise service life. Multistage smart charging technology enables the charger to be connected to your battery banks permanently.

As dictated by battery manufacturer's recommendations, batteries require a multistage charge sequence for perfect, fast and accurate charging. Our ePOWER multistage smart chargers deliver four primary charge stages:-

**Stage 1 - Bulk or Boost Charge;** The battery is charged at full rated output current of the charger until the battery reaches its final charging voltage, known as its absorption voltage. In this step, around 80% of the battery capacity is recovered as fast as possible.

**Stage 2 - Absorption Charge;** With the charger voltage held steady the remaining 20% is replaced allowing the current to drop as the battery approaches its full charge.

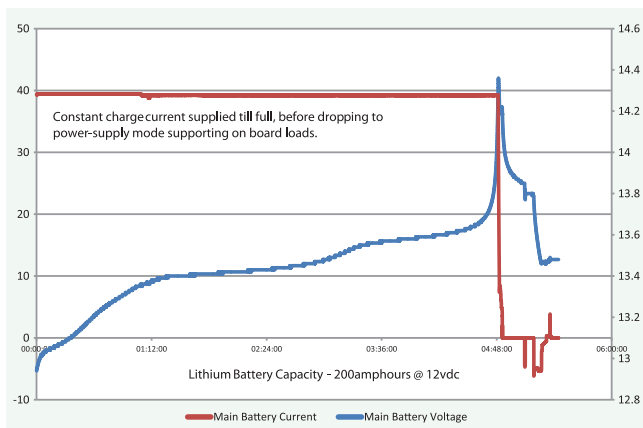
**Stage 3 - Float;** Finally, in the float stage the charger voltage is lowered and held at a constant and safe predetermined level. This prevents the battery from being overcharged while supporting any additional loads connected to the battery, such as DC lighting and refrigerators. This stage allows for the charger to be used as a DC power supply.

**Stage 4 - Maintenance;** This stage is a regular timed "return to bulk" stage. After 7 days of constant operation in "float" the Enerdrive ePOWER Battery Charger will switch the charger from float to bulk to agitate the batteries electrolyte helping to provide an extended service life.

## It's All About Lithium

The recent advances in high capacity Lithium battery technology have seen the need to develop a battery charger suited to their needs. With most traditional 'smart' chargers their suitability to Lithium batteries is limited. Lithium batteries require a constant current / constant voltage charge algorithm and are unique in that almost every amp-hour of charge delivered by the charger is accepted as one amp hour into the battery, hence the need to deliver a constant current as long as possible.

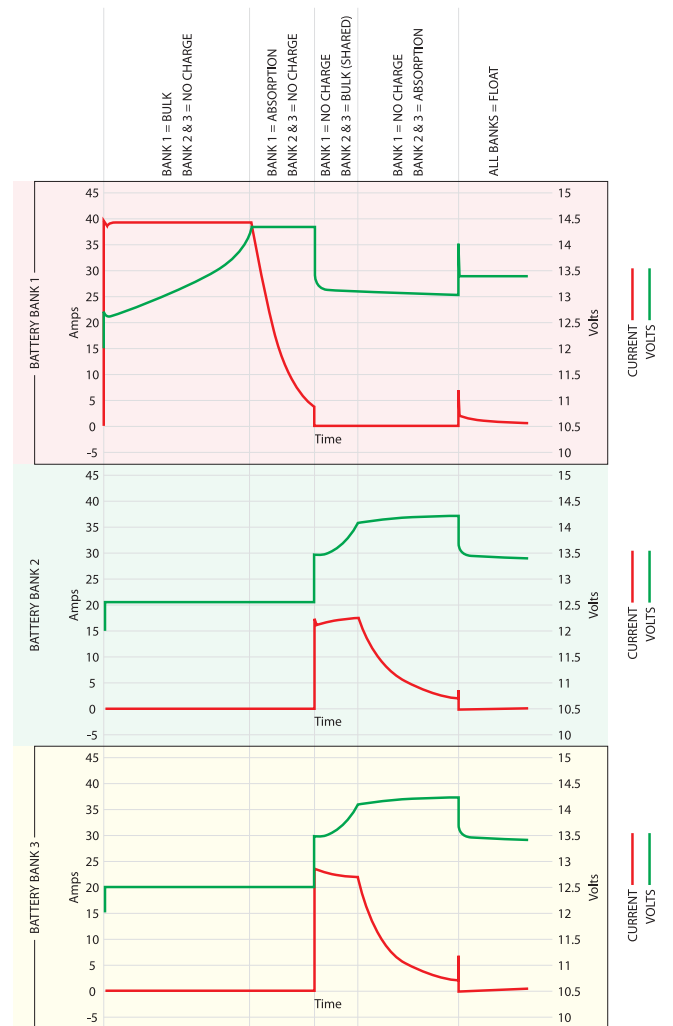
The Enerdrive ePOWER charger can be programmed for Lithium batteries. This setting delivers the full rated output of the charger constantly with the charger switching to power supply mode once the voltage peak is met (indicating a full battery bank). The graph below shows the ePOWER charger algorithm perfectly supporting Lithium battery requirements.



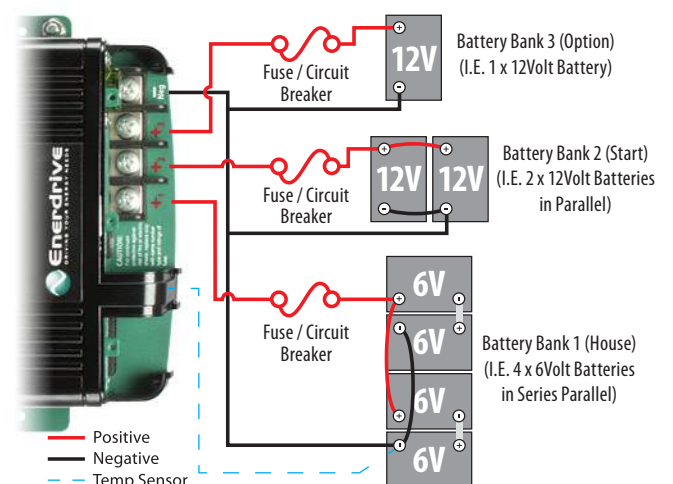
40amp Lithium Display.

## Bank 1 PRIORITY – Charge Where You Need it Most

The ePOWER Charger delivers a priority charge to Bank 1, or your main house battery bank which allows the charger to get this bank recharged the quickest, then transition the cycle to the lesser bank 2 & 3 batteries. The priority function also allows you to have a battery chemistry different to the other two, such as an AGM battery for house and lead calcium for your start banks. In the event that all 3 banks are in need of a charge, an over-ride function helps recover all 3 banks quickly and evenly before switching back to prioritise on Bank 1.



## Easy Installation for Set & Forget



**IMPORTANT NOTE: For Single Bank Charging: DO NOT Connect Bank 2 And 3 Outlet.**





Handy User Manual And Procedure Flow Chart App



Model:	EN31220	EN31240	EN31260	EN32430
<b>CHARGER OUTPUT:</b>				
Output Current (Maximum)	20A	40A	60A	30A
<b>OUTPUT VOLTAGE RANGE:</b>				
Charge		14.2 - 15.5 V		28.4 - 31.0V
Float		13.4 - 13.8 V		26.8 - 27.6V
Equalize		16.0 V		32.0V
Charging Control		Four stages (Bulk/Absorption/Float/Maintenance)		
		Two stages (Bulk/Absorption)		
		Constant Power Supply (Program setting)		
		Priority Battery Bank Charging		
DC Output Bank		Three (1 fully independent, 2 common with diode isolation)		
Selectable Battery Type		Gel, AGM, Flooded, Lithium, Program		
Standby Current		< 2 mA		
<b>CHARGER INPUT:</b>				
AC Input Voltage (Nominal)		90 to 265 VAC		
AC Input Operating Range	207-265 Vac (2.0 A Max) 90-125 Vac (3.8 A Max)	207-265 Vac (3.8 A Max) 90 - 125 Vac (7.7 A Max)	207-265 Vac (5.9 A Max) 90-125 Vac (11.3 A Max)	207-265 Vac (5.9 A Max) 90-125 Vac (11.3 A Max)
AC Input Frequency Range		47 - 63 Hz		
Power Consumption	350W (Full Load)	700W (Full Load)	1050W (Full Load)	1050W (Full Load)
Power Factor Correction		Yes		
Charger Efficiency		> 82%		
<b>PROTECTION AND FEATURES:</b>				
Reverse Polarity		Yes, (with user replaceable fuse/s)		
Over Charge		Yes, unit shutdown		
Over Temperature		Yes, unit de-rated and shutdown		
Output Short Circuit		Yes, (with user replaceable fuse/s)		
Cooling		Forced air ventilation (thermo controlled fan)		
Temperature Setting		Hot, Normal, Cold (no sensor connected)		
Battery Temp Sensor Port		RJ12 (standard battery temp. sensor supplied)		
<b>DISPLAY:</b>				
LCD Display (with back light)		Charging status, Battery Voltage, Output Current & Fault Codes.		
<b>AC INPUT AND DC OUTPUT CONNECTION:</b>				
AC Input Connection		IEC with Supplied 1.2M Power Lead		
DC Output Connection		Heavy Duty Terminal (3 banks) - Pan Heads 6mm Thread		
DC Output Ground		Single Heavy Duty Common Ground Stud		
<b>ENVIRONMENTAL AND OPERATING TEMPERATURE:</b>				
Storage Range		-40° to 70° C		
Operating Range		-20° to 60° C		
Humidity		5-95%, relative humidity non-condensing		
Ingress Protection		IP32 (Basic drip proof in vertical orientation)		
<b>Base Unit Weight and Dimensions:</b>				
Weight: (kg)	2.4	2.6	4.0	4.0
Dimension: (mm) L x W x H	295 x 206 x 86	295 x 206 x 86	356 x 206 x 99	356 x 206 x 99
Optional Accessories:		Remote Digital Display / Enerdrive Part Number EN3REM		
Regulatory Compliance:		Complies with AS/NZS 60335.2.29 Including Australian deviations.		

## Available Models

12Volt: 20amp - 40amp - 60amp - 120amp\*

24Volt: 30amp - 60amp\*



12V 60A and 24V 30A models run in parallel to double your output.

\*2 x 60amp 12V units = 120amp

\*2 x 30amp 24V units = 60amp

\* Note: Parallel function available early 2014

## Available Accessories



**Remote Control Panel**  
Remotely control the ePOWER battery charger from your dash board or other convenient locations. Perfect for controlling fan silent mode. Sold separately.



**Battery Temperature Sensor**  
Included standard.



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