

HIGH POWER MULTI-CHEMISTRY BATTERY CHARGER

CBC-5000 SERIES



This charger is designed for applications that demand adaptive charging for Lead Acid based and LiFePO4 (LFP) batteries. Battery can be connected to the charger all the time and the charger will keep on monitoring the battery .

Adaptive Charging Management

Lead Acid Battery

There are 5 Stage Charging for LEAD ACID based batteries namely: Soft-Start/ Bulk/ Absorption/ Float/ Standby

When battery is deeply depleted (battery voltage is less than 9V/ 18V) soft-start charging is activated with half rated charging current until battery voltage rises to 11V/ 22V then normal bulk charge with full current will kick in. Both soft-start and bulk charges are in constant current without exerting high voltage to the battery. When the battery voltage rises to a preset value then constant voltage charge occurs with decreasing current which leads float charging with lower constant voltage to keep the battery ready and light refill for any self-discharge or light load.

The charger will enter into an energy conservation (Standby) stage with lower Float Voltage after long period of inactivity of 72 hours or more has been detected. This Standby stage also helps to reduce grid corrosion.

Charger will automatically give a refreshing cycle charge (fast bulk & absorption, float) at 21 days interval of inactivity. This is to keep the electrolyte and the cells of the lead acid battery in good working condition.

There is a manual equalization mode for lead acid batteries either in plate or cylindrical cells subject to the recommendation of manufacturer.

Lithium (LiFePO4)

There is a special charge algorithm and treatment for Lithium Ion Phosphate (LFP) batteries to ensure safe and optimal charging adaptive to the special chemistry of the battery which is quite different to Lead Acid battery. There are only two active charging stages namely Bulk and Absorption, at the end of Absorption is the inactive (no charging current) Standby Stage. There is no Float and no automatic refreshing cycle charge for LFP.

Battery with load

A load can be connected to the battery during charging as long as the load is not larger than the rated output of the charger.

Construction, Misc. Features & Protection

The charger is housed in a robust anodized Aluminum body completed with Polycarbonate end caps.

- Battery temperature sensor is supplied as standard accessory
- Temperature control variable speed fan for cool and quiet operation.
- Temperature compensated charging (for Lead-Acid based batteries only) & Battery Protection:
 - When connected to the supplied battery temperature sensor, the charging voltages changes with the battery temperature such that charging voltage decreases with rise of temperature and increases with drop of battery temperature.
 - When battery temperature is over 60°C, the charger will shut down.

*Over Temperature Protection of charger:

At high operating temperature charger will gradually decreases the output power to protect the electronic components from further thermal stress and at the same time keeps a safe and continuous charging until the high limiting temperature 60°C is reached, charger will then shut down and self restart when charger cools down.

- Output short circuit protection.
- Output reversed polarity protection with Auto fuse.
- OLED display for indication of charging status, battery selection, charging voltage & current, AH.
- Two touch screen Button Setting with intuitive setting procedure.
- 25%/ 50%/ 75%/ 100% max. charging current selections allow an optimal charging current for a wider range of battery capacities.

* All values are based on the Standard ambient Temperature 25°C and Pressure 0.1Mpa.

* SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

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Specifications

Models	CBC-5130	CBC-5141	CBC-5160
AC Input Voltage	190-260VAC 50/ 60Hz~		
AC Input Current @ Full Load	≤2.6A	≤3.2A	≤4.0A
No Load Input Current	≤250mA		
Output (Charge) Voltage Selections			
Mode	Absorption	Float	
Lead	14.4V	13.3V	
AGM	14.7V	13.6V	
Lithium-1 (LiFePO4) / Lithium-2 (LiFePO4)	14.4V / 14.8V	N/A	
User Define	13.0V-15.0V	12.8V-13.8V	
Equalization for Lead	15.5V / 3A		
Standby Voltage for Lead/ AGM	12.9V/ 13.2V		
Minimum Battery Voltage	3V		
Recycle Day	21 days		
Remote Battery Temperature Sensor (supplied accessory)	Yes, -20mV/ °C		
Maximum Output Charge Current	30A	40A	60A
Soft Start Bulk Charge Current	15A	20A	30A
Optimal Efficiency	85%		
Recommended Battery Capacity Range	100-300AH	130-400AH	200-600AH

Models	CBC-5215	CBC-5221	CBC-5230
AC Input Voltage	190-260VAC 50/ 60Hz~		
AC Input Current @ Full Load	≤2.6A	≤3.2A	≤4.0A
No Load Input Current	≤250mA		
Output (Charge) Voltage Selections			
Mode	Absorption	Float	
Lead	28.8V	26.6V	
AGM	29.4V	27.2V	
Lithium-1 (LiFePO4) / Lithium-2 (LiFePO4)	28.8V / 29.6V	N/A	
User Define	26.0V-30.0V	25.6V-27.6V	
Equalization for Lead	31.0V / 1.5A		
Standby Voltage for Lead/ AGM	25.8V/ 26.4V		
Minimum Battery Voltage	3V		
Recycle Day	21 days		
Remote Battery Temperature Sensor (supplied accessory)	Yes, -40mV/ °C		
Maximum Output Charge Current	15A	20A	30A
Soft Start Bulk Charge Current	7.5A	10A	15A
Optimal Efficiency	85%		
Recommended Battery Capacity Range	50-150AH	70-200AH	100-300AH

General Specifications

Protections	Short Circuit protection, self-recoverable Over temperature protection, 3 steps decrease of output power, self-recoverable Battery over temperature protection, with battery remote sensor, Reverse Polarity(fused)
Cooling Method	Thermostatically Controlled Variable Low Speed Fan (0 to full speed)
Operating Temperature	-10°C to +50°C (Maximum Output up at 40°C)
Wireless Remote Control	Smart Phone APPS
Approval	CE
Dimension (LxWxH)	270x160x80 mm 10.6x6.3x3.2 inch (for CBC-5160, 5230)
Weight	TBA kg TBA lbs

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