INDUSTRIAL BATTERY CHARGER

24V/48V/110V/220V upto 1000 Amp

FCBC - Charger | Discharger (Regenerative)
Dual FCBC - Charger | Discharger (Regenerative)

Answering All Power Needs

www.enertechups.com

EnerTech
Answering All Power Needs

ABOUT ENERTECH

Enertech® UPS Pvt. Ltd. is a leading fast moving Indian multinational manufacturing company, providing the next generation technology products solutions for the Renewable and Power sectors.

We provide a comprehensive wide range of power management solutions including ***Solar hybrid Inverter, Solar UPS, Online UPS, Industrial UPS, Industrial Battery Charger, Static Frequency Converter.***

With the in-house R&D setup Enertech strive for constant success in leveraging technological innovation with next generation patented technology solutions.

Enertech® with its head quarter at Pune was established in the year 1989. All operations are at Sigma Level 4.87. The company has purposefully expanded by providing power solutions for ***IT, Industrial, Healthcare, Banking, and Infrastructure*** over the period and expanded footprints in ***Africa, Tanzania, Zambia, Cameroon, Nigeria, Niger, Yemen, Sudan, Zimbabwe, USA.***

Leading Power Solution Provider

35+ Partners Across India

20000+ Esteemed Customers

OUR GOAL

Vision

- To be the most trusted and preferred brand.
- Best in class customer focused approach.
- To provide safe, cost effective, quality products.

Values

- Integrity
- Commitment
- Team Work

INDUSTRIAL BATTERY CHARGER

1-PHASE AND 3-PHASE

Enertech is specially designed to meet the most demanding industry specifications and includes a wide choice of ratings and operator friendly features. Enertech designed to meet the most demanding specifications of industrial requirements. Enertech product includes a wide choice of ratings and operator friendly features.

BENEFITS

- DSP Controlled based IGBT Rectifier
- Low voltage ripple to optimize battery life In-built galvanic isolation
- Input Power Factor Near to unity.
- Selectable Float Boost Via LCD
- Parallel operation of FCBC
- Automatic change over from float to boost mode, boost to float mode.
- Wifi / GSM Monitoring (optional).
- Programmable DC Voltage & DC current.
- Customized DC Voltage setting (24 v - 360V) (360V - 600V) (600 - 1000V)

Monitoring

- State-of-the-art Individual DC feeder earth leakage monitoring.
- Battery Monitoring System (BMS).
- Each Feeder status monitoring (On/o/trip).

High electrical performances

- Wide input voltage tolerance to comply with the worst utility conditions.
- Near Unity input power factor, low THDi rejection and low in rush current to save installation and operation costs.
- High efficiency to lower power consumption.

Industrial flexibility

- Suitable for all battery types (Lead Acid or Nickel-Cadmium or Plante.etc)
- Scalability to meet the evolving load changes
  Ingress protection up to IP 55
  Suitable for all weather conditions: works from - 10° C to 60° C

APPLICATION

- Power generation
- Oil & gas
- Rail transportation infrastructures
- Power transmission and distribution substations
- Charger (DC-DC) of grid connected solar inverter
- Control HT panel
- Other industries





FLOAT CUM BOOST BATTERY CHARGER WORKING METHODOLOGY

- Industrial battery chargers are used for charging large battery banks and also provide DC output to the load
- Enertech offers DC power systems that use the Optimal IGBT technology offering high input PF and greater efficiency
- Float cum boost chargers ensure that the charger supplies DC load automatically with regulated DC voltage.
- A float cum boost charger is functionally equipped with two operating modes; a float mode and a boost mode.

OPERATIONS OF BATTERY CHARGER

(Power flow scheme of a popular & typical Float and Boost Battery Charger (two rectifiers)

Stage 1 - Normal Operation

- Float rectifier feeds the load and trickle charges the Battery.
- Boost charger remains in stand by OFF position.

Stage 2 - Power Outage

- BATTERY BACK UP PERIOD Battery feeds the Load.

Stage 3 - Power Restoration

- Boost Charging Of Battery After Deep Discharge Boost Charger Charges Battery When Float Rectifier Feeds Load.

Stage 4 - Battery Charged

- Back to NORMAL operation. Float rectifier feeding the load and trickle charging the Battery. Boost charger remains in stand by OFF position

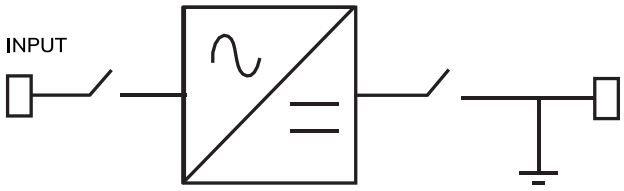
Stage 5 - Float Rectifier Failed- Emergency Float Mode

- Boost charger acts as Float rectifier feeding the load and charging the Battery.

POSSIBLE CONFIGURATION OF BATTERY CHARGER

1 FCBC

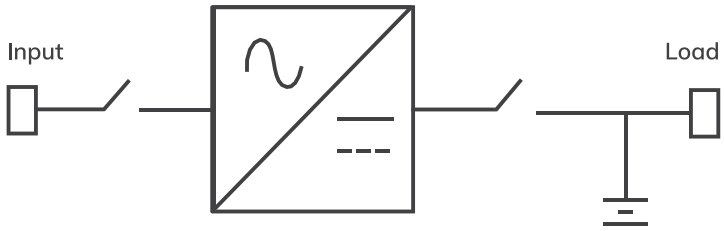
In this configuration, charger is connected directly to battery and load. Normally, the charger will be in float mode trickle charging the battery and supplying the load. When AC mains fail the battery will supply the load. On restoration of power, the charger will switch to boost mode, charging the battery and supplying the load. In the mode, boost voltage will be appeared across the load terminal. There is also an option for integral DC distribution board.



2 FCBC WITH IGBT AS REGULATOR

This configuration is very similar to the one described above. The extra feature is Dropper Diodes Chain which is required when there is only

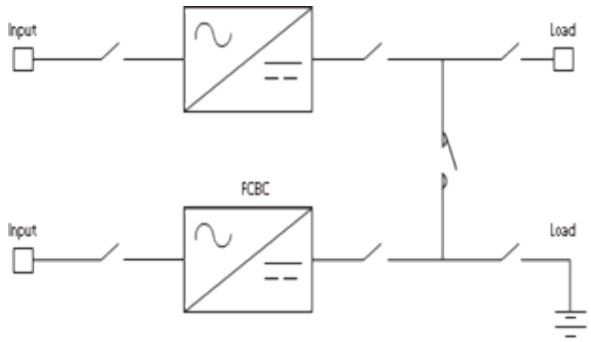
One FCBC and battery boost charging voltage is far high and if the voltage at load terminals needs to be limited within +/-10% of nominal system voltage. During float mode and AC mails fails condition the VDD shall be bypassed through DC contractor.



3 FC & FCBC

Here, one charger will always be in float mode (FC) and the other charger switches between float and boost modes based on battery condition (FCBC). When AC mains are ON, both chargers will be in float mode sharing the total load and trickle charging the battery. When AC mains fail, then contactor will be ON and load will be supplied by battery.
Upon resumption of power, FCBC will switch to boost mode to boost charge the battery.

Simultaneously, the contactor will be OFF. In this condition, both the charges will be working separately, FC supplying to load and FCBC boost charging the battery.



4 FCBC WITH IGBT AS A SWITCH.

Here, one charger will always be in float mode(FC) and the other charger switches between float and boost modes based on battery condition (FCBC). When AC mains are ON, both chargers will be in float mode sharing the total load and trickle charging the battery. When AC mains fail, then contactor will be ON and load will be supplied by battery.
Upon resumption of power, FCBC will switch to boost mode to boost charge the battery.

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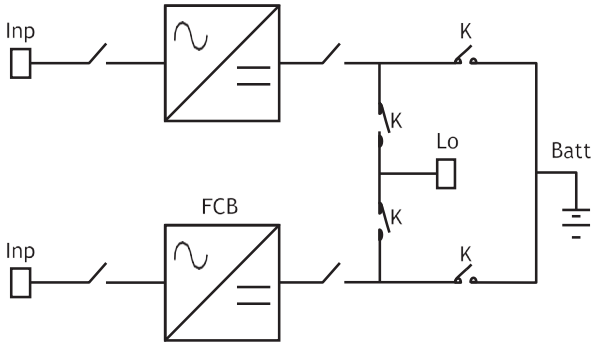
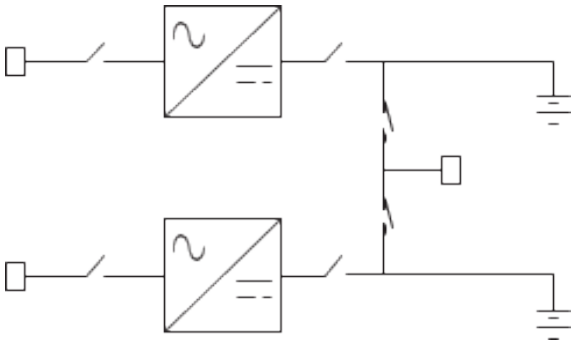


5 DUAL FCBC WITH 2X100% BATTERY, COMMON LOAD

In this configuration, both the charges are float cum boost charges(FCBC) and the battery's configuration is 2x 100%. Each battery has 1 battery connected directly to it; however only 1 charger can go to boost mode at a time. If battery 1 needs boost charging, then FCBC-1 will go to boost mode to turbo charge the battery 1 and K1 will be OFF. At this time FCBC-2 will be float mode trickle charging the battery-2 and supplying the load.

If battery-2 needs boost charging, then FCBC-2 will go boost mode to boost charge the battery-2 and K2 will be OFF. At this time, FCBC-1 will be in float mode trickle charging the battery-1 and supplying the load.

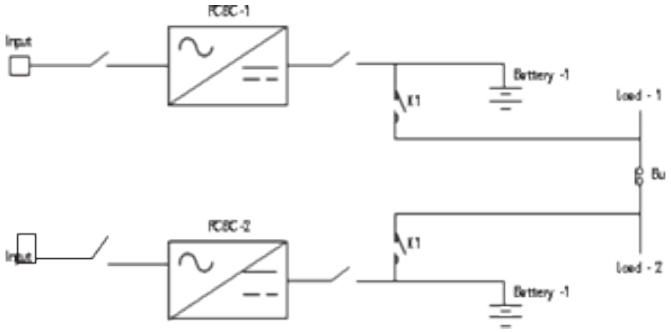


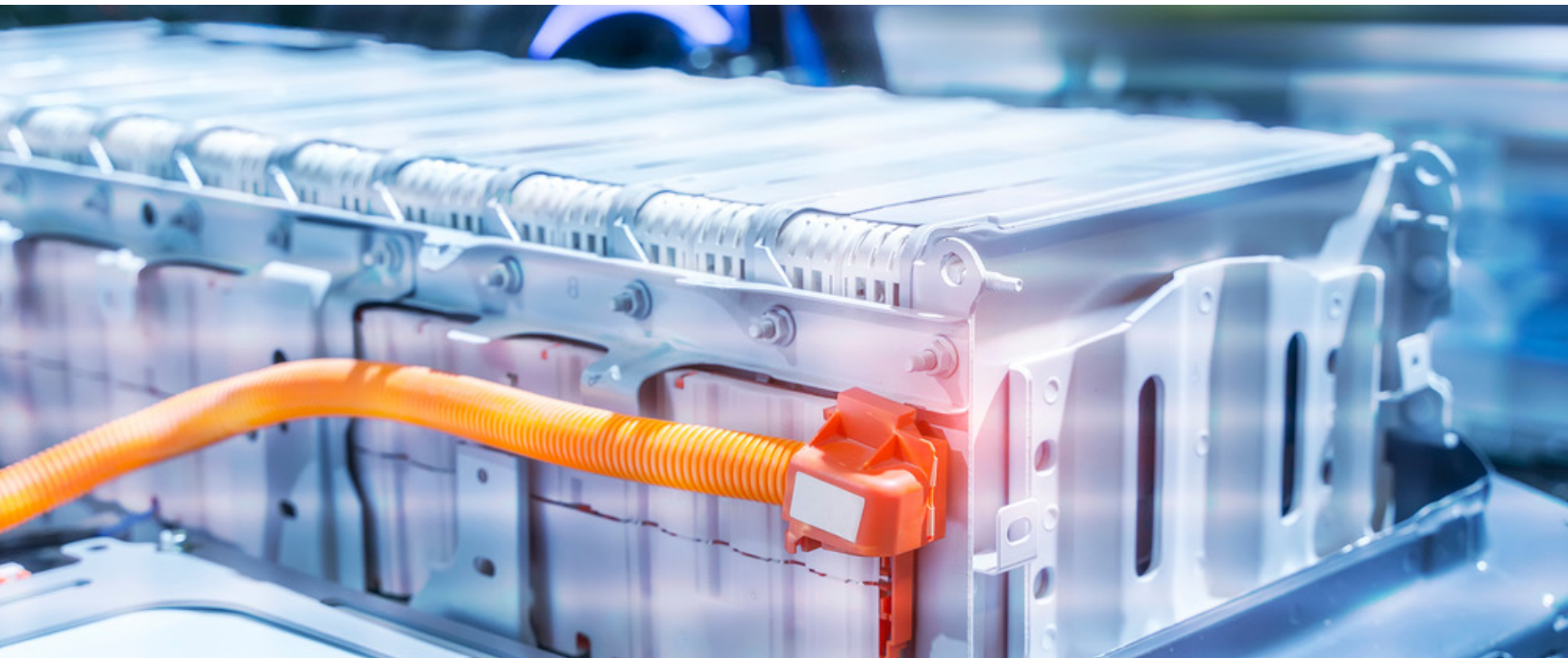
6 DUAL FCBC WITH 2X100% BATTERY, DUAL LOAD WITH BUS COPULER

Bot the chargers have their respec- tive batteries, but still only one charger can go to boost mode at a time. The bus coupler can be on auto/manual mode. (If required, we can give both chargers online boost charging as an option.)

If battery-1 needs boost charging, then FCBC-1 will go boost mode to turbo charge the battery-1 and K1 will be OFF.

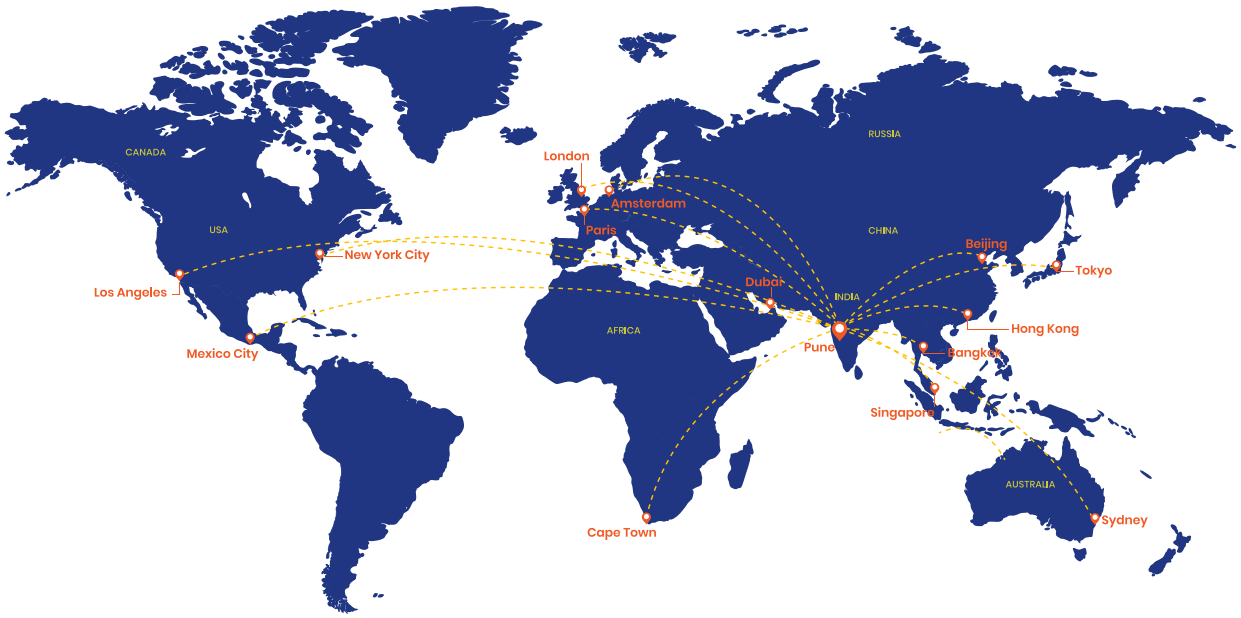
If it is a manual system, then bus coupler has to be turned ON before any of the charges go to boost mode. If it is on auto mode, then bus coupler will become ON whenever the charges go to boost mode





SPECIFICATIONS

STANDARD SPECIFICATION	RECTIFIER MODULES													
MODEL	1PH						3PH							
NOMINAL VOLTAGE RATING	48		110				110				220			
(FCBC+FC) CURRENT CAPACITY	25	50	25	50	75	100	50	100	150	200	50	100	150	200
INPUT														
Input Voltage Range	170 to 260						360 to 450							
Nominal Frequency	50 Hz (± 6%)						50 Hz (± 6%)							
Input Power Factor	Near to Unity													
DG / Grid Compatibility	YES													
SLOW START TIME	UPTO 10 SEC													
RIPPLE	≤ 1%													
LOAD REGULATION	≤ 1%													
NOISE	≤ 60DB													
Charging Current	Selectable as 5A Steps													
AC to DC Isolation	In built Isolation Transformer													
Input ISOLATION	OPTIONAL													
Parameters displayed on LCD														
Input Group	INPUT VOLTAGE, INPUT CURRENT, INPUT FREQUENCY													
Battery Group	BATTERY VOLTAGE, CHARGING CURRENT, DISCHARGING CURRENT													
Output Group	OUTPUT VOLTAGE, OUTPUT CURRENT													
Parameters displayed on mimic	MAINS ON, CHARGER ON, OUPPUT ON, FLOAT MODE, BOOST MODE, DC OVER VOLTAGE,DC UNDER VOLTAGE, OVER LOAD, OVER TEMPERATURE, SPP													
PROTECTIONS	• Alarms are provided for all important protections.													
	1. Input CB	6. Battery CB												
	2 Input Under Voltage	7. Battery Low												
	3. Input Over Voltage	8. Battery Over voltage												
	4. Charger Over voltage	9. Charging Current Limit												
	5. Surge	10. Over temperature												
Ingress Protection	IP20													
CONNECTIVITY														
Communication	RS 232 , (Modbus RS485, GSM Connectivity - Optional)													
Monitoring	ENERLOG (Remote Monitoring Solution) - Optional													
BATTERY														
Grid Charging Current	Selectable as 5A Steps													
Battery Charging Voltage	Selectable from LCD Display													
Type & No. of cells	Lead Acid / VRLA / Ni-Cd/Lithium													
ENVIRONMENTAL														
Acoustic Noise Level from 1 m distance(Ref : ISO 3746)	≤ 65 dB													
Operating Temperature	0 to 40 Deg C													
Storage Temperature	-10 Deg C to 60 Deg C													
Relative Humidity	Up to 95 % (Non Condensing)													
Altitude	< 1000 meter above sea level													
Basic Seismic Qualification	0.5g (The test inspection shall be with extra cost)													
PHYSICAL														
Enclosure Protection Grade	IP 20 Compatible to IEC 60529:2001-02													
Cooling	Forced Air													
Colour	RAL 7016/ RAL 9016													
Cable Entry	Bottom													
DIMENSIONS (STANDARD/OPTIONAL)														
Dimensions (in mm)	(Approx.)													
	48V		110V				110V							
Rating														
Width (W)	345		345		450		450		450		450		800	
Depth (D)	660		660		800		800		900		900		950	
Height (H)	670		670		800		800		800		800		1700	



OUR ESTEEMED CLIENTS

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