



# CB245A Battery Charger



## Features:

- Input: Single-phase 115 - 230 - 277 VAC
- Output: Battery charging 24 VDC; 5 A
- Suited for the following battery types:  
Open Lead Acid, Sealed Lead Acid, lead Gel and Ni-Cd (option)
- Automatic diagnostic of battery status. Charging curve IUoUo, constant voltage and current
- Switching technology, output voltage 28.8 VDC
- Three charging levels: Boost, Trickle, Recovery.
- Protected against short circuit, inverted polarity, over load.
- Signal output (contact free) for fault battery state
- Protection degree IP20 - DIN rail mountable

## INPUT

## BATTERY OUTPUT

## GENERAL DATA

## ENVIRONMENT

## SAFETY & EMC

## OTHERS

### Cat. No.

### CB245A

<b>Input Data</b> Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (Vn and In Load) I <sub>pt</sub> Frequency Input Current Internal Fuse External Fuse (recommended)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC $\leq 16 A \leq 5 \text{ msec.}$ 47 ~ 63 Hz $\pm 6\%$ 3.3 A - 115 VAC; 2.2 A ~ 2300 AC 4 A 10 A (MCB curve B)
<b>Battery Output (Battery Care)</b> Boost charge (25°C) (typ. at I <sub>n</sub> ) Max. time Bust Charge (tpy. at I <sub>n</sub> ) Min. time Bust Charge (tpy. at I <sub>n</sub> ) Trickle charge (25°C) (typ. at I <sub>n</sub> ) Recovery Charge Charging. Max I <sub>batt</sub> (I <sub>n</sub> ) Efficiency (50% - I <sub>n</sub> ) Charging current limiting I <sub>adj</sub> Quiescent Current Charging Curve automatic: IUoUo Detection of element in short circuit Short-circuit protection Over Load protection Over Voltage Output protection Jumper Configuration battery type (V cell) Ni-Cd (optional)	28.8 VDC 15 h 1 min. 27.5 VDC 2 ~ 18 VDC 5 A $\pm 5\%$ 89% 20 - 100 % I <sub>n</sub> $\leq 5 \text{ mA}$ 3 stage Yes Yes Yes Yes 2.23;2.25;2.27;2.3; 1.41-1.5 (20 elem.)
<b>General Data</b> Insulation voltage (In / Out) Insulation voltage (In / PE) Insulation voltage (Out / PE) Protection Class (EN/IEC 60529) Protection class Reliability: MTBF IEC 61709 Pollution Degree Environment Connection Terminal Blocks screw Type Dimensions (W-H-D) Weight	3000 VAC 1605 VAC 500 VAC IP20 I, with PE connected > 300.000 hours 2 2.5mm (24-14AWG) 65x115x135 mm (2.56 x 4.53 x 5.32 in) 0.65 Kg approx. (1.43 lbs.)
<b>Climate Data</b> Ambient temperature (operation) De Rating Ta > 50°C Ambient temperature Storage Humidity at 25°C no condensation Cooling	-25 - +70°C (-13~158°F) - 2.5%(I <sub>n</sub> ) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convention
<b>Norms and Certifications</b> Conforming to:	IEC/EN 60335-2-29, EN60950/UL1950, Electrical safety, 89/336/EEC, EMC Directive, 2006/95/EC (Low Voltage), DIN41773 (Charging cycle), Emission: IEC 61000-6-4, Immunity: IEC 61000-6-2-CE
<b>Signal Output (free switch contact)</b> Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
<b>Type of Signal Output Contact</b> Max. current can be switched (EN60947.4.1): Max. DC1: 30 VDC 1 A; AC1: 60 VAC 1A Min. 1mA at 5 VDC	Resistive load Min load

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# CB245A Battery Charger

## Technical Features

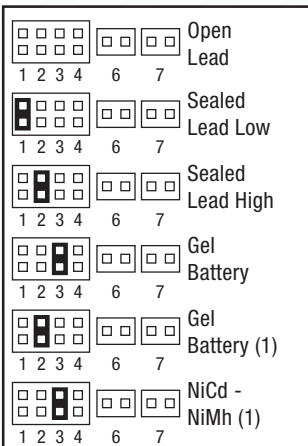
The CB series battery chargers are designed with advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is based on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Autodiagnostic system, monitoring battery faults such as, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd(option). They are programmed for two charging levels, boost and trickle. A rugged casing with bracket for DIN rail mounting provide IP20 protection degree. They are extremely compact and cost-effective.

## Charging

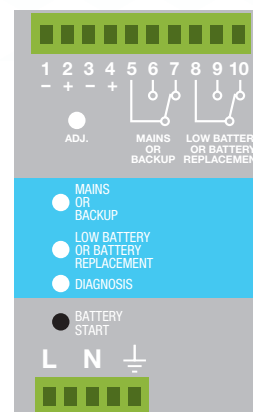
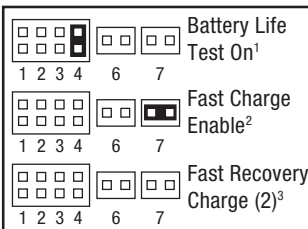
Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified by a flashing code on a Diagnosis LED and Fault Battery LED:

State	Diagnosis LED	Battery Fault LED
Charging Type		
Trickle	1 Blink/sec	OFF
Boost	2 Blink/sec	OFF
Recovery	5 Blink/sec	OFF
Auto diagnosis		
Reverse polarity	1 Blink	ON
Battery No connect	2 Blink	ON
Element in Short C.	3 Blink	ON
Replace Battery	5 Blink	ON

## Jumper for Battery Type Selection

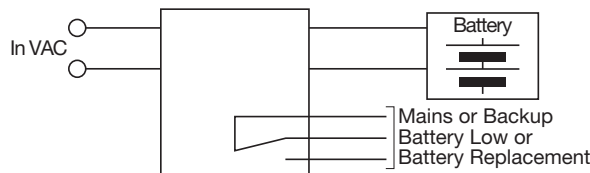


## Jumper for Functional Setting

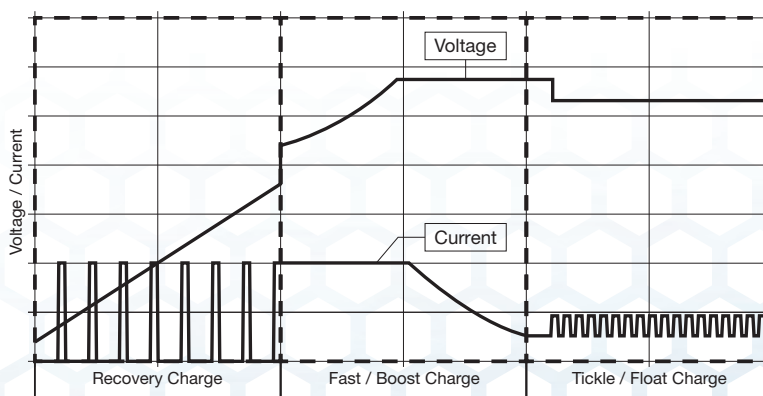


- 1 Jumper present: life test enabled.
- 2 Jumper present: fast test enabled.
- 3 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

## Wiring Diagram



## CB Charging Diagram



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