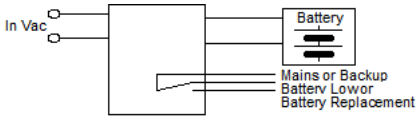
# CB123A Battery Charger




**Input: Single-phase 115 ÷ 277 Vac**

**Output: Battery charging 12 Vdc; 3 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 14.4 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**

## Technical features

The CB series is a "Switching technology" and "Battery Care philosophy", since years parts of the core know-how at ADEL system, led to the development of this advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is base 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 Auto-diagnostic 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.

## General Data

| | |
|---|---|
| Insulation voltage (In /Out) | **3000 Vac** |
| Insulation voltage (In / PE) | **1605 Vac** |
| Insulation voltage (Out / PE) | **500 Vac** |
| Protection Class (EN/IEC 60529) | **IP20** |
| Protection class | **I, with PE connected** |
| Reliability: MTBF IEC 61709 | **> 300.000 h** |
| Pollution Degree Environment | **2** |
| Connection Terminal Blocks screw Type | **2,5mm(24–14AWG)** |
| Dimensions (w-h-d) | **45x100x100 mm** |
| Weight | **0.30 Kg approx** |

## Climatic Data

| | |
|---|---|
| Ambient temperature (operation) | **-25 ÷ +70°C** |
| De Rating T$^a$ > 50°C | **- 2.5%(In) / °C** |
| Ambient temperature Storage | **-40 ÷ +85°C** |
| Humidity at 25 °C no condensation | **95% to 25°C** |
| Cooling | **Auto Convention** |

## Norms and Certifications

Conforming to: IEC/EN 60335-2-29,EN60950/UL1950,Electrical safety,89/336/EEC,EMCDirective,2014/35/UE (Low Voltage), Safety EN IEC 62368-1, DIN41773 (Charging cycle), Emission: IEC 61000-6-4,Immunity: IEC 61000-6-2.CE

## Signal Output (free switch contact)

| Model | CB123A | CB123ALC |
|---|---|---|
| Main or Backup Power | **Yes** | **No** |
| Low Battery | **Yes** | **No** |
| Fault Battery | **Yes** | **No** |

## Type of Signal Output Contact

| | |
|---|---|
| Max. current can be switched (EN60947.4.1): | |
| Max. DC1: 30 Vdc 1 A; AC1: 60 Vac 1A | **Resistive load** |
| Min.1mA at 5 Vdc | **Min load** |

## Input Data

| | |
|---|---|
| Nominal Input Voltage (2 x Vac) | **115 – 230 – 277** |
| Input Voltage range (Vac) | **90 – 305** |
| Inrush Current (Vn and In Load) I$^2$t | **≤ 11 A ≤ 5 msec.** |
| Frequency | **47 – 63 Hz ±6%** |
| Input Current (115 – 230 Vac) | **0.5 – 0.3 A** |
| Internal Fuse | **4 A** |
| External Fuse (recommended) | **10 A (MCB curve B)** |

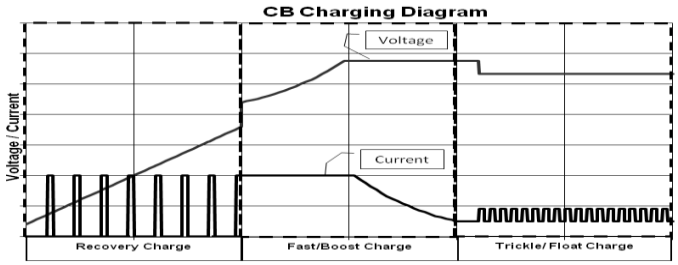
## Battery Output (Battery Care)

| **Model** | **CB123A** |
|---|---|
| Adjustable charging current $I_{adj}$ (% In) | **20 ÷ 100** |
| Boost charge (25 °C) (typ. at In) | **14.4 Vdc** |
| Max. time Bust Charge (tpy. at In) | **15 h** |
| Min. time Bust Charge (tpy. at In) | **70 min.** |
| Trickle charge (25 °C) (typ. at In) | **13.75 Vdc** |
| Jumper Configuration battery type (V cell) Ni-Cd (optional) | **2.23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)** |
| Recovery Charge | **2 – 7 Vdc** |
| Charging. Max $I_{batt}$ (In) | **3 A ± 5%** |
| Efficiency (50% - In) | **81%** |
| Quiescent Current | **≤ 5 mA** |
| Charging Curve automatic: IUoUo | **3 stage** |
| Detection of element in short circuit | **Yes** |
| Short-circuit protection) | **Yes** |
| Over Load protection | **Yes** |
| Over Voltage Output protection | **Yes** |

## Charging

Aautomatic 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 it is Voltages and current stabilized IUoUo. The state of charging battery and Auto-diagnosis 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 | 1Blink | ON |
| | Battery No connect | 2Blink | ON |
| | Element in Short C. | 3Blink | ON |
| | Replace Battery | 5Blink | ON |






All specifications are subject to change without notice