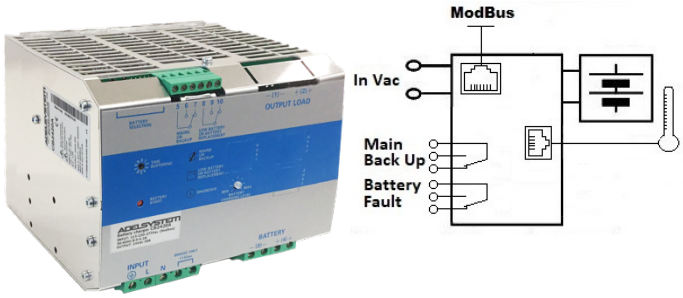
CB2420A Battery Charger



Input: Single-phase 115 ÷ 277 Vac

Output: Battery charging 24 Vdc; 25 A

Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, lead Gel, Ni-Cd and Li-Ion

Automatic diagnostic of battery status. Charging curve IUoU, constant voltage and current

Switching technology, output voltage 28.8 Vdc Five charging levels: Recovery, Bulk, Absorption, Boost, Float

Protected against short circuit, inverted polarity, over Load.

Signal output (contact free) for fault battery state

ModBus (RTU) connection

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 and Li-Ion. They are programmed for two charging levels, boost and float. A rugged casing with bracket for DIN rail mounting provides IP20 protection degree.

Norms and Certifications

In Conformity to: c UL us EN60950 / UL60950-1 and CSA C22.2 No. 60950-1-07 (Information Technology Equipment Safety Part1); Safety EN IEC 62368-1: 2014/AC:2015; EMC Directive 2014/35/UE and Low voltage Directive 2014/35/UE; Emission: IEC 61000-6-4; Immunity: IEC 61000-6-2. CE.

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 Signal:	**2.5mm(24–14AWG)**
Connection Terminal Blocks screw Type	**4 mm (30-10 AWG)**
Protection class (PE Connected)	**I, with PE**
Dimensions (w-h-d)	**150x115x135 mm**
Weight	**1.5 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**
Altitude: 0 to 2 000m - 0 to 6 560ft	**No restrictions**
Altitude: 2 000 to 6 000m - 6 560 to 20 000ft	**De-rating 5°C/1000m**
Cooling	**Auto Convection**

Input Data

Nominal Input Voltage (2 x Vac)	**115 – 230 – 277**
Input Voltage range (Vac)	**90 – 135 / 180 – 305**
Inrush Current (Vn and In Load) I^2t	**≤ 35 A ≤ 5 msec.**
Frequency	**47 – 63 Hz ±6%**
Input Current (115 – 230 Vac)	**9 – 4.5 A**
Internal Fuse	**10 A**
External Fuse (recommended)	**16 A (MCB curve B)**

Battery Output (Battery Care)

Boost-Fast charge Jumper Configuration 25°C (V/cell)	**Lead Acid: 2.4; NiCd:1.51; Li-ion: 3.65**
Float Charge Jumper Configuration 25°C (V/cell):	**Lead Acid: 2.23; 2.25; 2.3NiCd:1,4 Li-ion: 3.45**

Max. time Boost Charge (tpy. At In)	**15 h**
Min. time Boost Charge (tpy. At In)	**1 min.**
Recovery Charge	**2 – 16 Vdc**
Charging. Max I_{batt} (In)	**25 A ± 5%**
Efficiency (50% of In)	**91%**
Charging current limiting I_{adj}	**10 ÷ 100 % / I_n**
Quiescent Current	**≤ 100 mA**
Charging Curve automatic: IUoU	**5 stage**
Detection of element in short circuit	**Yes**
Sulfated battery check	**Yes by Jumper**
Short-circuit protection)	**Yes**
Over Load protection	**Yes**
Over Voltage Output protection	**Yes**
Power Supply Mode	**Yes**
Remote Input Control (RTCONN cable)	**Boost / Float**

Type of Signal Output Contact

Dry Contact. 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 permissive load)

Fault System / Low Battery	**C**	**NC**	**NO**
Main or Back Up	**C**	**NC**	**NO**

Signal Input / Output (RJ45)

Temp. Comp. Battery (with external probe)	**RJTemp(cable) Aux1**
Remote monitoring data:	**RJ45: Aux 2**
Protocol:	**ModBusRTU (RS485)**

Charging

Type of charging it is Voltages and Current stabilized IUoU DIN41773 Charging cycle

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 it is Voltages and current stabilized IUoU. 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	Float	1 Blink/2 sec	OFF
	Absorption	1 Blink/sec	
	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