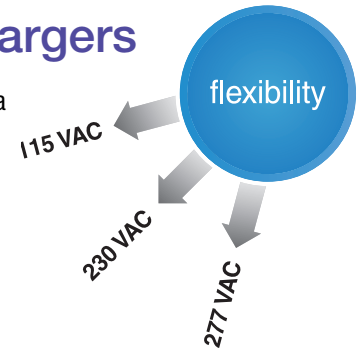




CB Type Intelligent Battery Chargers

The CB type battery chargers are designed and manufactured with a wide input voltage, single or two phase 115-230-277 VAC.



Technology

The CB series is a new range of battery chargers based on two strategic know-how elements.

Switching technology

We have 25 year experience in design of advanced stabilized switching technology power supplies. A battery charger based on this technology is much more efficient and much smaller and lighter than traditional linear technology battery chargers.

Micro-processor and Battery Care

Unlike most other state-of-the-art battery chargers, the CB series is equipped with a micro-processor which controls the charging process and enables several monitoring functions.

Maximum safety and protection

The CB series is designed to provide safe operation and long battery life. The following protections are standard features:

- Output protected against short circuit and overload
- High insulation between primary and secondary
- Protection against deep battery discharge
- Detection of batteries with wrong rated voltage
- Protection against reverse polarity connection
- Protection against the effect of parallel connection with other power sources, e.g. gensets.

All protections have automatic reset. No thermal fuse to be replaced.

One device for all battery types

Completely automatic, the battery chargers of the CB series are microprocessor controlled devices suited to charging most batteries types thank to factory pre-set and selectable charging curves.

The can charge open lead acid, sealed lead acid, Bel and Ni-Cd, Ni-MH batteries. It is possible to change or add other charging curves connecting the device to a portable PC.

Muti-Stage charging Three charging modes

Automatic multi-stage operation and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting the CB device. The type of charging it is Voltages stabilized and current stabilized IUoUo.

CB battery chargers feature three charging modes, identified by a flashing code on a LED.

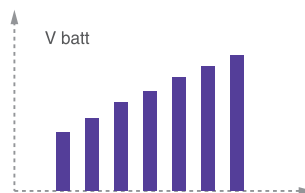
- **Boost** (Boost-Bulk) (Blink 2/sec)
- **Trickle** (also known as float or maintenance charging) (Trickle - Float) (Blink 1/sec)
- **Recovery** (Recovery) (Blink 5/sec)

Recovery charging

Automatic multi-stage operation optimizes and adapt to battery status, even when the battery voltage is very low. CB can recharge batteries even when their voltage is close to zero. It allows recharge and complete recovery of flat batteries.

Setting of battery maximum charging current

The maximum battery charging current can be set from 20% to 100% of the device rated value. Not available on LC models.



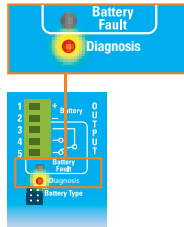
CB Type Intelligent Battery Chargers

Diagnostic of battery and device

All CB devices support the user during installation and operation. An LED flashing sequence code allows to discriminate among various possible faults.

LED Diagnosis:

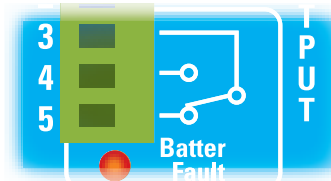
- **1 flash** Reverse polarity, wrong battery voltage.
- **2 flashes** Disconnected battery.
- **3 flashes** Battery element in short circuit.
- **5 flashes** Battery to be replaced (Internal impedance Bad or Bad battery wire connection.)



Monitor signals

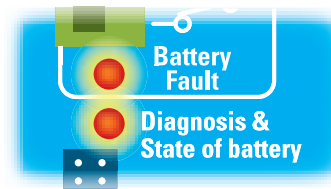
Signal contracts

- CB chargers indicate battery status and faults also via a change-over contact with galvanic isolation.
- Battery common fault.
- Unit disconnected from mains.



Visual indication

- Battery common fault
- Unit disconnected from mains
- Charging mode
- CV device self-diagnostic



Diagnostic checks

Check for accidental disconnection of the battery cables

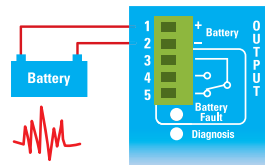
- If happen the devices switch off immediately the output power.

Battery not connected

- If the battery it is not connected no output power.

Test of quality wire connections

- During trickle charge the quality(resistance) on the battery connection is checked every 20 sec. this to detect if the cable connection has been properly made.



Test of battery voltage connections

- Appropriate voltage check, to prevent connection of wrong battery types.

End of charging check

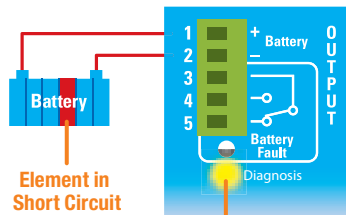
- When the battery it is completely full, the device automatically switch in trickle charging mode.

Reverse polarity check

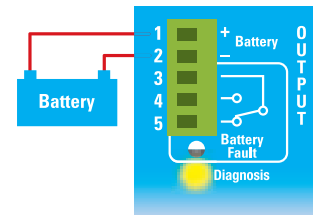
- If the battery it is connected with inverted polarity, the devices are automatically protected.

Check for elements in short circuit

- Thanks to specific algorithms of evaluation, the CBs recognize batteries worth element in short circuit.



Single output devices



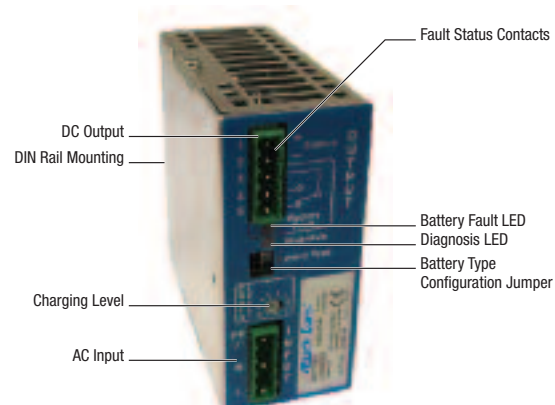
With the CB Battery Charger Line, Altech offers a highly reliable battery management solution. Operating at single phase Input Voltages of 115-230-277 VAC, the devices supply an Output of 12VDC and up to 35A or 24VDC and up to 20A.

Equipped with microcontrollers, the CB line offers fully automated multi-stage charging that will expand the battery's life significantly. Several diagnostic and monitoring features ensure easy handling and a high amount of transparency during daily operation.

Altech's CB line battery chargers are based on the switching technology which allows much higher efficiency as well as smaller and lighter devices. Additionally, several standard safety and protection features ensure safe installation and operation.

Features:

- Fully automated charging
- Three charging modes
- Compact, rugged metal case
- Available in 12VDC and 24VDC
- Suitable for most common battery types
- Adjustable charging current
- Easy battery diagnosis and fault identification either by LED or external devices connected to fault status contacts
- High efficiency up to 91% through switching technology
- Several output protection features such as short circuit, overload, deep battery discharge etc.
- DIN rail mounting
- Small size
- 3 year warranty



CB Battery Chargers - Single Phase Specifications

Case 0



12V DC Single Phase DIN Rail Battery Charger

Cat. No.	Case	Input VAC	Output VDC	Output A	Recovery Charge VDC	Trickle Charge VDC	Boost Charge VDC	NOTES
CB123A	0	115-230-277	12	3	2-7	13.75	14.4	
CB126A*	0	115-230-277	12	6	2-7	13.75	14.4	
CB1210A	1	115-230-277	12	10	2-9	13.75	14.4	
CB1235A	3	115-230-277	12	35	2-9	13.75	14.4	

* Not for new designs. See CB12245A for new design.

Case 1



24V DC Single Phase DIN Rail Battery Charger

Cat. No.	Case	Input VAC	Output VDC	Output A	Recovery Charge VDC	Trickle Charge VDC	Boost Charge VDC	NOTES
CB243A	0	115-230-277	24	3	2-16	27.5	28.8	
CB245A	1	115-230-277	24	5	2-18	27.5	28.8	
CB2410A	2	115-230-277	24	10	2-18	27.5	28.8	
CB2420A	3	115-230-277	24	20	2-18	27.5	28.8	

Case 2



Multi Voltage Single Phase DIN Rail Battery Charger

Cat. No.	Case	Input VAC	Output VDC	Output A	Recovery Charge VDC	Trickle Charge VDC	Boost Charge VDC	NOTES
CB12245A	0	115-230-277	12/24	6/5	2-7/2-16	13.75/27.5	14.4/28.8	

Case 3



Case Sizes

- Size 0:** 45 mm x 100 mm x 100 mm (1.78 x 3.94 x 3.94 in.)
- Size 1:** 65 mm x 115 mm x 135 mm (2.56 x 4.53 x 5.32 in.)
- Size 2:** 100 mm x 115 mm x 135 mm (3.94 x 4.53 x 5.32 in.)
- Size 3:** 150 mm x 115 mm x 135 mm (5.91 x 4.53 x 5.32 in.)

Output Current can be adjusted from 20%-100% of value given above.



CB123A Battery Charger



Features:

- Input: Single-phase 115 - 230 - 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 mountable

INPUT

BATTERY OUTPUT

GENERAL DATA

ENVIRONMENT

SAFETY & EMC

OTHERS

Cat. No.	CB123A
Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (Vn and In Load) I2t Frequency Input Current Internal Fuse External Fuse (recommended)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC 11 A ≤ 5 msec. 47 ~ 63 Hz ±6% 0.5 A ~ 115 VAC; 0.3A ~ 230 VAC 4 A 10 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at In) Max. time Bust Charge (tpy. at In) Min. time Bust Charge (tpy. at In) Trickle charge (25°C) (typ. at In) Recovery Charge Charging. Max Ibatt (In) Adjustable charging current Iadj (% In) Efficiency (50% - In) 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)	14.4 VDC 15 h 70 min. 13.75 VDC 2 ~ 7 VDC 3 A ±5% 20 – 100 81% ≤5 mA 3 stage Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
General Data 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) 45x100x100 mm (1.78 x 3.94 x 3.94 in.) 0.30 Kg approx. (0.65 lbs.)
Climate Data 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%(In) / °C -40 – +85°C (-40~185°F) 95% to 25°C Auto Convection
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB123A Battery Charger

Technical Features

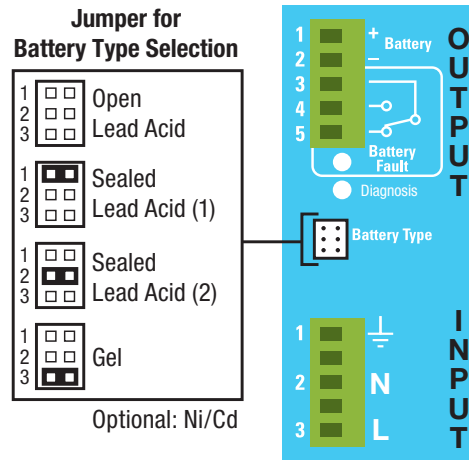
The CB series battery chargers are designed with advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is based on algorithms that implement rapid and automatic charging, battery charge optimization 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

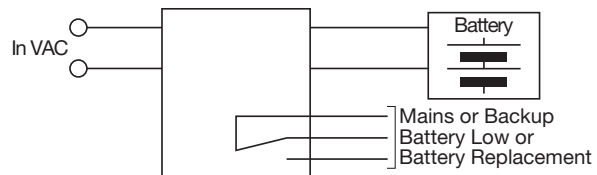
Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified 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

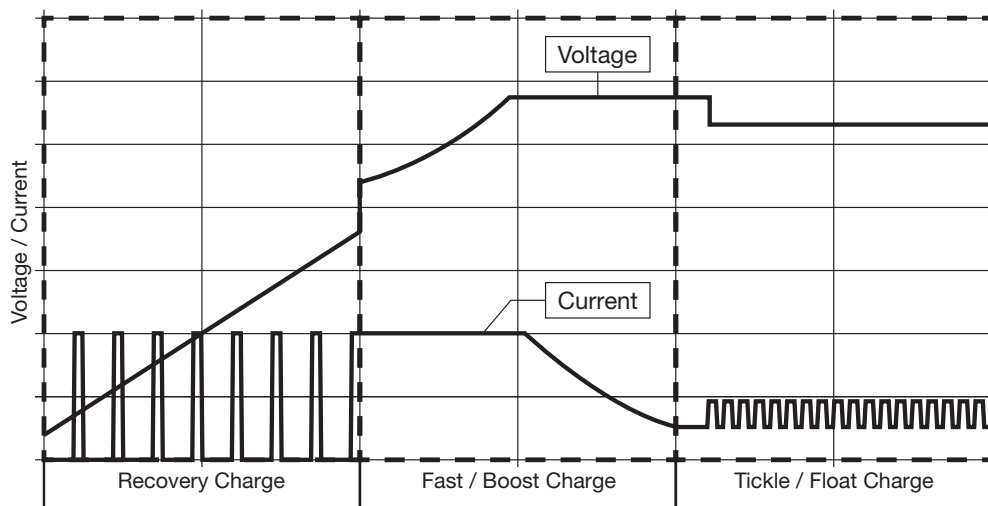
Wiring Terminals and Jumper Settings



Wiring Diagram



CB Charging Diagram





CB126A Battery Charger



*** Not for new designs.**

Features:

- Input: Single-phase 115 - 230 - 277 VAC
- Output: Battery charging 12 VDC; 6 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 mountable.

INPUT

BATTERY OUTPUT

GENERAL DATA

ENVIRONMENT

SAFETY & EMC

OTHERS

Cat. No.	CB126A
Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (I _n and I _n Load) I _{2t} Frequency Input Current Internal Fuse External Fuse (recommended)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC ≤ 11 A ≤ 5 msec. 47 ~ 63 Hz ±6% 1 A ~ 115 VAC; 0.7 A 230 VAC 4 A 10 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at I _n) Max. time Bust Charge (typ. at I _n) Min. time Bust Charge (typ. at I _n) Trickle charge (25°C) (typ. at I _n) Recovery Charge Charging. Max I _{batt} < 40°C (I _n) Charging. Max I _{batt} > 40°C (I _n) Efficiency (50% - I _n) Charging current limiting I _{adj} 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)	14.4 VDC 15 h 70 min. 13.75 VDC 2 ~ 7 VDC 6 A ±5% 4 A 81% 20 – 100 % I _n ≤5 mA 3 stage Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
General Data 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) 45x100x100 mm (1.78 x 3.94 x 3.94 in.) 0.30 Kg approx. (0.65 lbs.)
Climate Data 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 _n) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convection
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB126A Battery Charger

*** Not for new designs.**

Technical Features

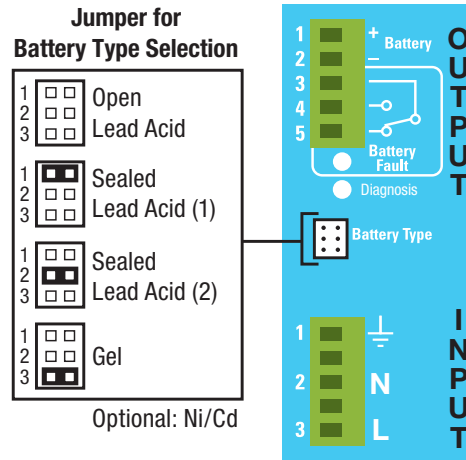
The CB series battery chargers are designed with advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is based on algorithms that implement rapid and automatic charging, battery charge optimization 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

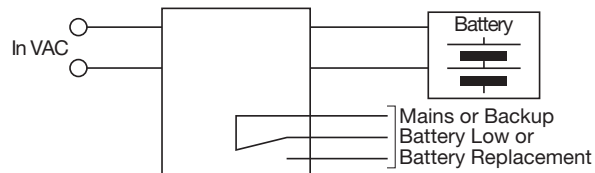
Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified 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

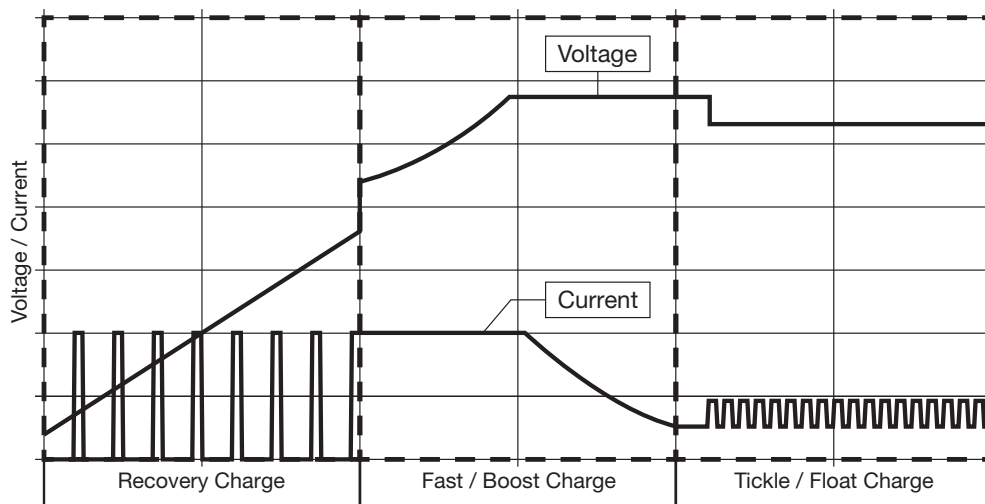
Wiring Terminals and Jumper Settings



Wiring Diagram



CB Charging Diagram





CB1210A Battery Charger



Features:

- Input: Single-phase 115 - 230 - 277 VAC
- Output: Battery charging 12 VDC; 10 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 mountable

INPUT

BATTERY OUTPUT

GENERAL DATA

ENVIRONMENT

SAFETY & EMC

OTHERS

Cat. No.	CB1210A
Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (Vn and In Load) I2t 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 $\pm 6\%$ 2.4 A ~ 115 VAC; 1.2 A 230 VAC 4 A 10 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at In) Max. time Bust Charge (tpy. at In) Min. time Bust Charge (tpy. at In) Trickle charge (25°C) (typ. at In) Recovery Charge Charging. Max Ibatt (In) Efficiency (50% - In) Charging current limiting Iadj 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)	14.4 VDC 15 h 1 min. 13.75 VDC 2 ~ 9 VDC 10 A $\pm 5\%$ 89% 20 – 100 % In $\leq 5 \text{ mA}$ 3 stage Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
General Data 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.)
Climate Data 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%(In) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convention
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB1210A Battery Charger

Technical Features

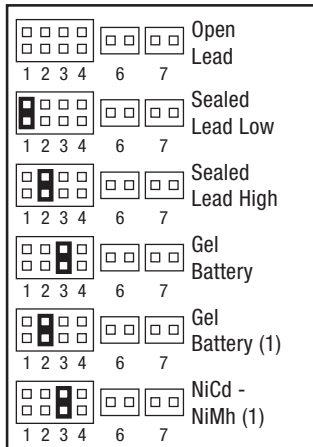
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Charging

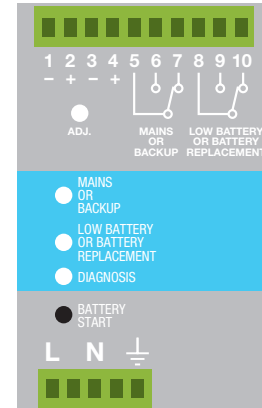
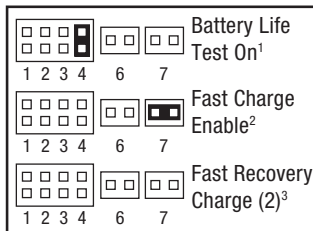
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	State	Diagnosis LED	Battery Fault LED
Charging Type	Trickle	1 Blink/sec	OFF
	Boost	2 Blink/sec	OFF
	Recovery	5 Blink/sec	OFF
Auto diagnosis	Reverse polarity	1 Blink	ON
	Battery No connect	2 Blink	ON
	Element in Short C.	3 Blink	ON
	Replace Battery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

Jumper for Battery Type Selection

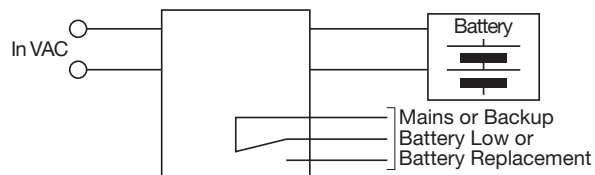


Jumper for Functional Setting

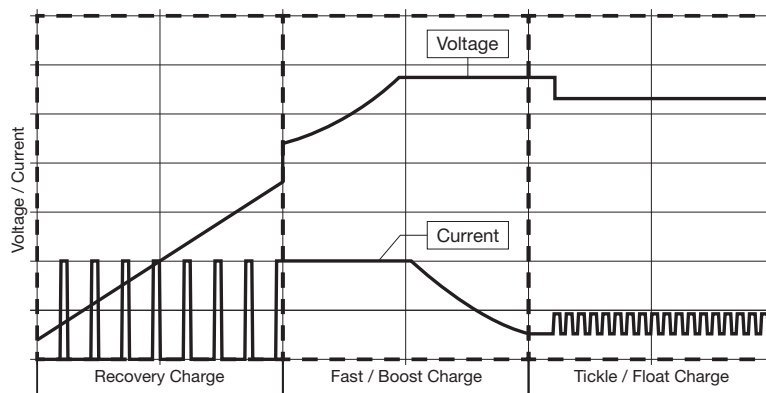


- 1 Jumper present: life test enabled.
- 2 Jumper present: fast test enabled.
- 3 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

Wiring Diagram



CB Charging Diagram





CB1235A Battery Charger



Features:

- Input: Single-phase 115 - 230 - 277 VAC
- Output: Battery charging 24 VDC; 35 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 I_{Uo}U_o, 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.	CB1235A
Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (V _n and I _n Load) I ² t Frequency Input Current Internal Fuse External Fuse (recommended)	115 / 230 ~ 277 VAC 90 ~ 135 / 180 ~ 305 VAC ≤ 35 A ≤ 5 msec. 47 ~ 63 Hz ±6% 1.0 A ~ 115 VAC; 0.7 A 230 VAC 10 A 16 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at I _n) Max. time Bust Charge (tpy. at I _n) Min. time Bust Charge (tpy. at I _n) Trickle charge (25°C) (typ. at I _n) Recovery Charge Charging. Max I _{batt} (I _n) Efficiency (50% - I _n) Charging current limiting I _{adj} Quiescent Current Charging Curve automatic: I _{Uo} U _o Detection of element in short circuit Short-circuit protection Over Load protection Over Voltage Output protection Power Supply Mode Jumper Configuration battery type (V cell) Ni-Cd (optional)	14.4 VDC 15 h 1 min. 13.75 VDC 2 ~ 9 VDC 35 A ±5% 91% 20 – 100 % I _n ≤5 mA 3 stage Yes Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
General Data 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 4mm(30–10AWG) 150x115x135 mm (5.91 x 4.53 x 5.32 in.) 1.5 Kg approx. (3.31 lbs.)
Climate Data 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 _n) / °C -40 – +85°C (-40~185°F) 95% to 25°C Auto Convection
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB1235A Battery Charger

Technical Features

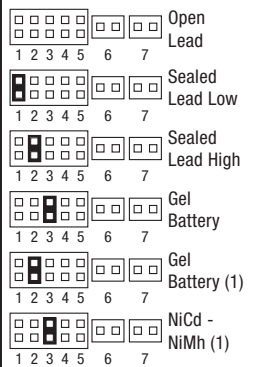
The CB series battery chargers are designed with advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is based on algorithms that implement rapid and automatic charging, battery charge optimization 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

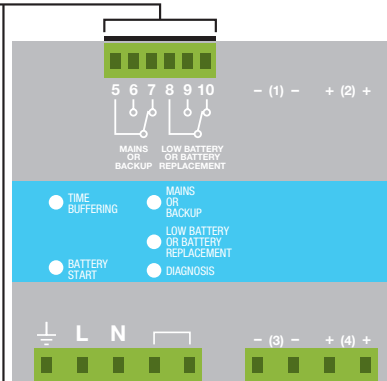
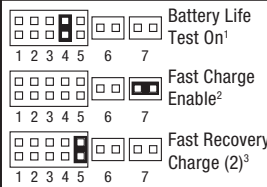
Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified 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

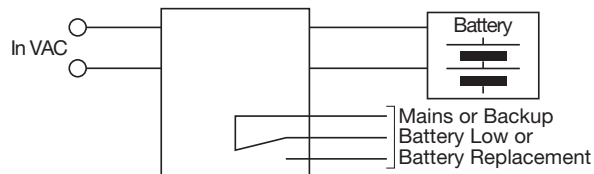


Jumper for Functional Setting

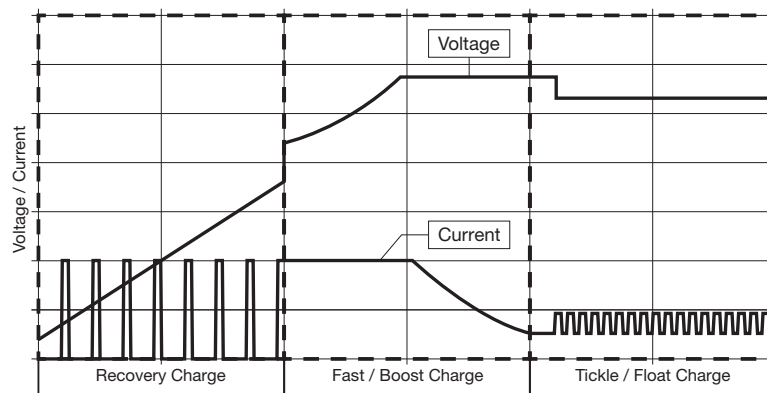


- 1 Jumper present: life test enabled.
- 2 Jumper present: fast test enabled.
- 3 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

Wiring Diagram



CB Charging Diagram





CB243A Battery Charger



Features:

- Input: Single-phase 115 - 230 - 277 VAC
- Output: Battery charging 24 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 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.	CB243A
Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (Vn and In Load) I2t Frequency Input Current Internal Fuse External Fuse (recommended)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC $\leq 7 \text{ A} \leq 5 \text{ msec.}$ 47 ~ 63 Hz $\pm 6\%$ (115 ~ 230 VAC) 1 ~ 0.7 A 4 A 10 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at In) Max. time Bust Charge (tpy. at In) Min. time Bust Charge (tpy. at In) Trickle charge (25°C) (typ. at In) Recovery Charge Charging. Max Ibatt (In) Adjustable charging current Iadj (% In) Efficiency (50% - In) 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 70 min. 27.5 VDC 2 ~ 16 VDC 3 A $\pm 5\%$ 20 - 100 81% $\leq 5 \text{ mA}$ 3 stage Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41-1,5 (20 elem.)
General Data 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) 45x100x100 mm (1.78 x 3.94 x 3.94 in.) 0.30 Kg approx. (0.66 lbs.)
Climate Data 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%(In) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convention
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB243A Battery Charger

Technical Features

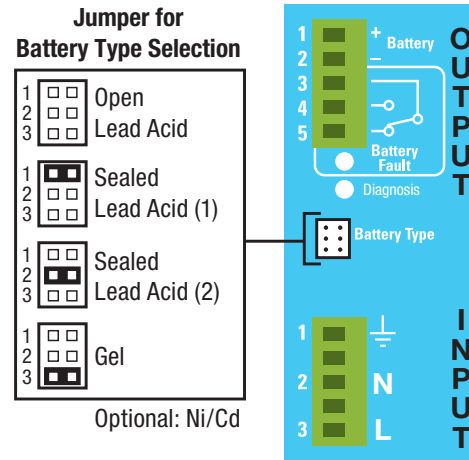
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Charging

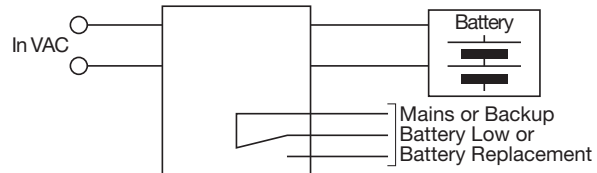
Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified 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

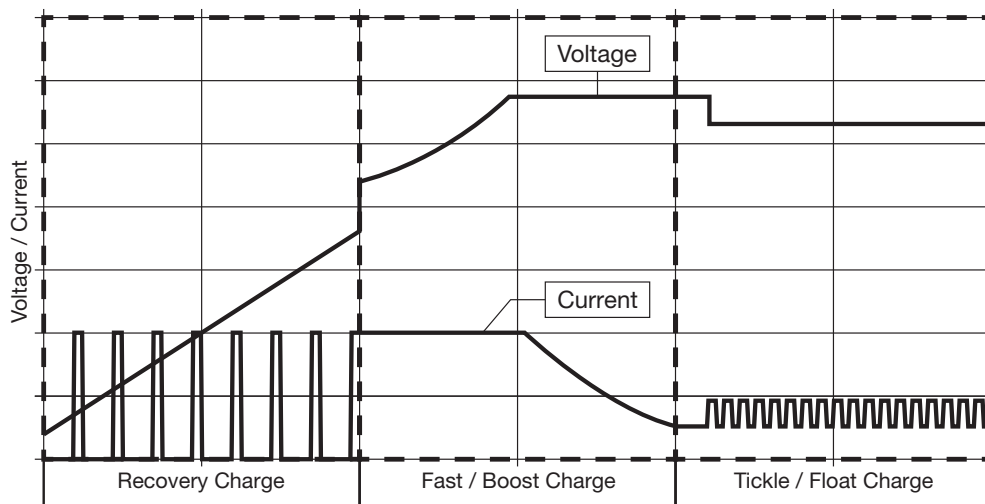
Wiring Terminals and Jumper Settings



Wiring Diagram



CB Charging Diagram





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
Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (Vn and In Load) I ² t Frequency Input Current Internal Fuse External Fuse (recommended)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC ≤ 16 A ≤ 5 msec. 47 ~ 63 Hz ±6% 3.3 A - 115 VAC; 2.2 A ~ 2300 AC 4 A 10 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at I _n) Max. time Bust Charge (tpy. at I _n) Min. time Bust Charge (tpy. at I _n) Trickle charge (25°C) (typ. at I _n) Recovery Charge Charging. Max I _{batt} (I _n) Efficiency (50% - I _n) Charging current limiting I _{adj} 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 ±5% 89% 20 – 100 % I _n ≤5 mA 3 stage Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
General Data 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.)
Climate Data 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%(In) / °C -40 – +85°C (-40~185°F) 95% to 25°C Auto Convention
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB245A Battery Charger

Technical Features

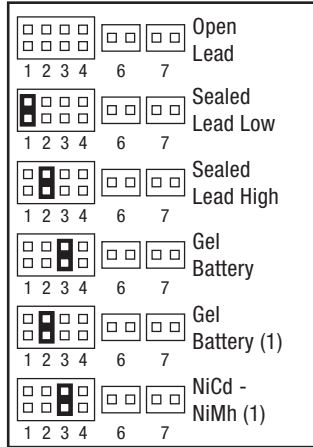
The CB series battery chargers are designed with advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is based on algorithms that implement rapid and automatic charging, battery charge optimization 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

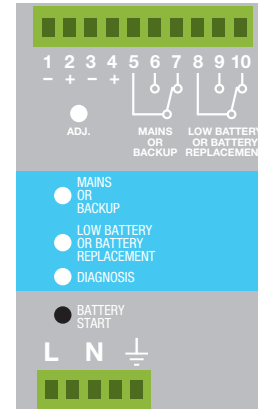
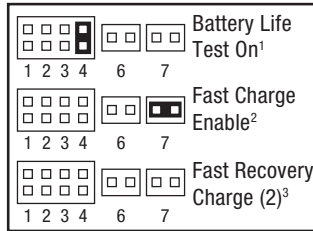
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	State	Diagnosis LED	Battery Fault LED
Charging Type	Trickle	1 Blink/sec	OFF
	Boost	2 Blink/sec	OFF
	Recovery	5 Blink/sec	OFF
Auto diagnosis	Reverse polarity	1 Blink	ON
	Battery No connect	2 Blink	ON
	Element in Short C.	3 Blink	ON
	Replace Battery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

Jumper for Battery Type Selection

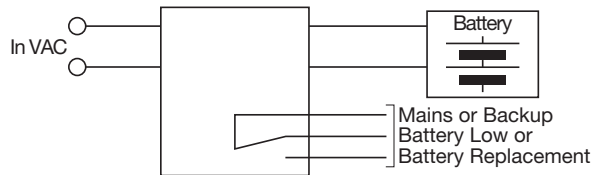


Jumper for Functional Setting

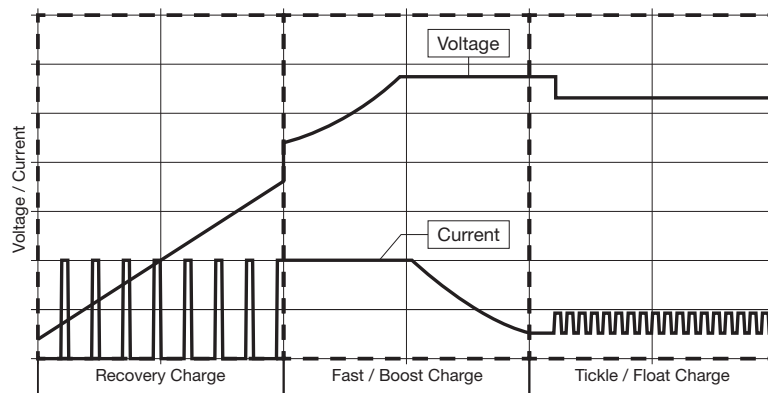


- 1 Jumper present: life test enabled.
- 2 Jumper present: fast test enabled.
- 3 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

Wiring Diagram



CB Charging Diagram





CB2410A Battery Charger



Features:

- Input: Single-phase 115 - 230 - 277 VAC
- Output: Battery charging 24 VDC; 10 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.	CB2410A
Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (I _n and I _n Load) I ² t Frequency Input Current Internal Fuse External Fuse (recommended)	115 / 230 ~ 277 VAC 90 ~ 135 / 180 ~ 305 VAC ≤ 16 A ≤ 5 msec. 47 ~ 63 Hz ±6% 3.3 A ~ 115 VAC; 2.2 A ~ 230 VAC 6.3 A 16 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at I _n) Max. time Bust Charge (typ. at I _n) Min. time Bust Charge (typ. at I _n) Trickle charge (25°C) (typ. at I _n) Recovery Charge Charging. Max I _{batt} (I _n) Efficiency (50% - I _n) Charging current limiting I _{adj} 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 10 A ±5% 88% 20 – 100 % I _n ≤5 mA 3 stage Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
General Data 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) 100x115x135 mm (3.94 x 4.53 x 5.32 in) 0.85 Kg approx. (1.87 lbs.)
Climate Data 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%(In) / °C -40 – +85°C (-40~185°F) 95% to 25°C Auto Convention
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB2410A Battery Charger

Technical Features

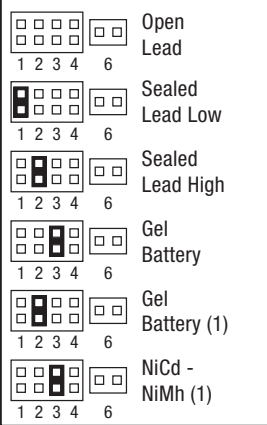
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Charging

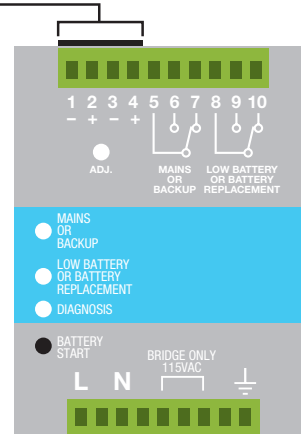
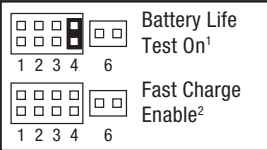
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	State	Diagnosis LED	Battery Fault LED
Charging Type	Trickle	1 Blink/sec	OFF
	Boost	2 Blink/sec	OFF
	Recovery	5 Blink/sec	OFF
Auto diagnosis	Reverse polarity	1 Blink	ON
	Battery No connect	2 Blink	ON
	Element in Short C.	3 Blink	ON
	Replace Battery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

Jumper for Battery Type Selection

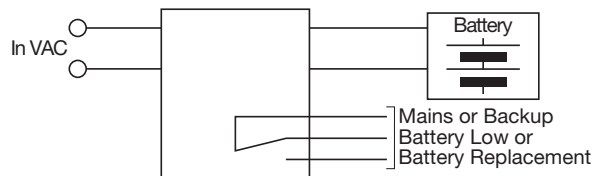


Jumper for Functional Setting

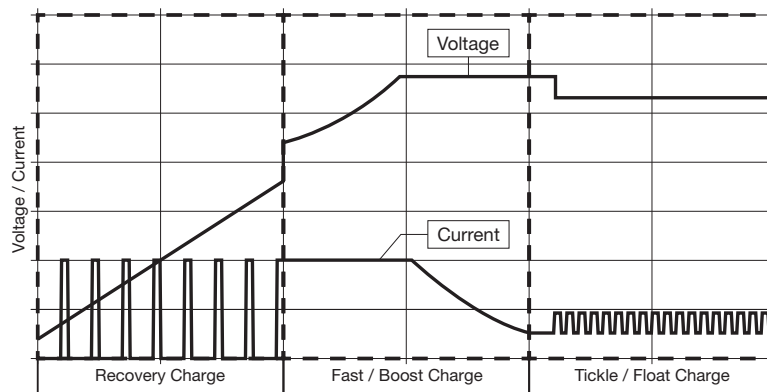


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- 2 Jumper present: fast test enabled.
- 3 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

Wiring Diagram



CB Charging Diagram





CB2420A Battery Charger



Features:

- Input: Single-phase 115 - 277 VAC
- Output: Battery charging 24 VDC; 20 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 I_{UoUo}, 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.

CB2420A

Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (Vn and In Load) I _{2t} Frequency Input Current Internal Fuse External Fuse (recommended)	115 ~ 230 ~ 277 VAC 90 ~ 135 / 180 ~ 305 VAC $\leq 35 \text{ A} \leq 5 \text{ msec.}$ 47 ~ 63 Hz $\pm 6\%$ (115 ~ 230 VAC) 8 ~ 4.2 A 10 A 16 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at I _n) Max. time Bust Charge (typ. at I _n) Min. time Bust Charge (typ. at I _n) Trickle charge (25°C) (typ. at I _n) Recovery Charge Charging. Max I _{batt} (I _n) Adjustable charging current (% I _n) Efficiency (50% - I _n) Charging current limiting I _{adj} Quiescent Current Charging Curve automatic: I _{UoUo} Detection of element in short circuit Short-circuit protection Over Load protection Over Voltage Output protection Power Supply Mode Jumper Configuration battery type (V cell) Ni-Cd (optional)	28.8 VDC 15 h 1 min. 27.5 VDC 2 ~ 18 VDC 20 A $\pm 5\%$ 20 - 100 91% 20 - 100 % I _n $\leq 5 \text{ mA}$ 3 stage Yes Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41-1,5 (20 elem.)
General Data 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 4 mm(30-10AWG) 150x115x135 mm (5.91 x 4.53 x 5.32 in.) 1.5 Kg approx. (3.31 lbs)
Climate Data 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 _n) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convection
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB2420A Battery Charger

Technical Features

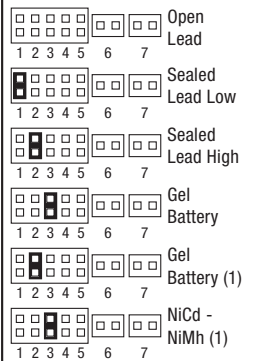
The CB series battery chargers are designed with advanced multi-stage battery charging method, completely automatic and suited to meet the most advanced requirements of battery manufacturers. The Battery Care concept is based on algorithms that implement rapid and automatic charging, battery charge optimization 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

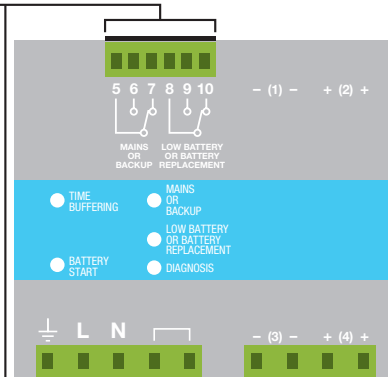
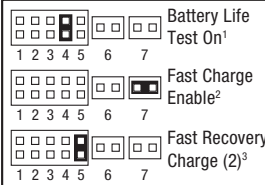
Automatic multi-stage charging and real time diagnostic allow fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting. Type of charging is Voltages and current stabilized IUoUo. The state of charging battery and Autodiagnosis of the systems are identified 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

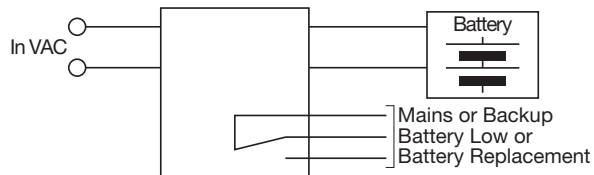


Jumper for Functional Setting

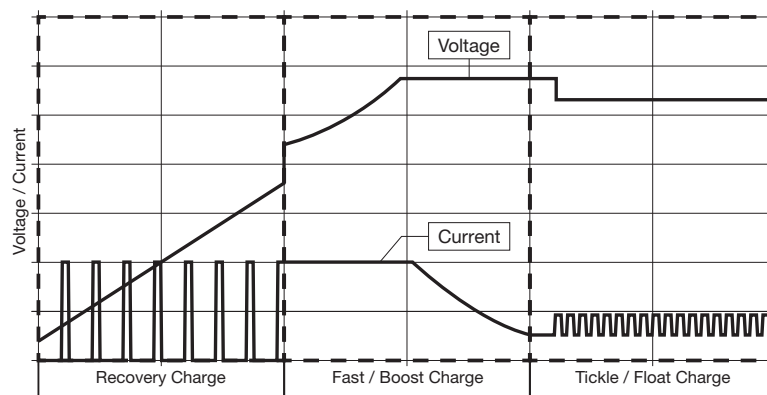


- 1 Jumper present: life test enabled.
- 2 Jumper present: fast test enabled.
- 3 Jumper present: fast recovery charge enabled only for size 3. Possibility to recharge the battery also when the voltage is close to zero with the maximum power of the device.

Wiring Diagram



CB Charging Diagram





CB12245A Battery Charger



E353241

Features:

- Input: Single-phase 115 - 230 - 277 VAC
- Output: Battery charging 12 VDC; 24 VDC (switch select)
- 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 / 28.8 VDC
- Four charging levels: Boost, Absorption, Trickle, Recovery.
- Protected against short circuit, reversed 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

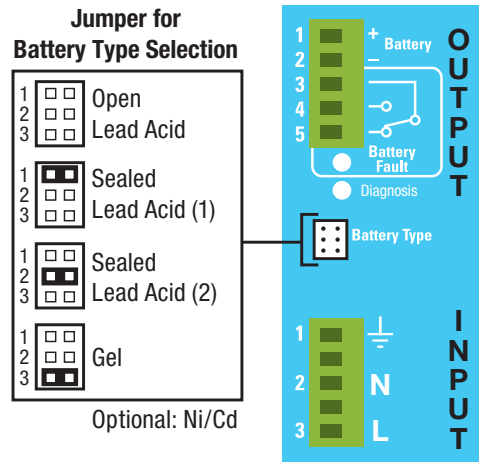
OTHERS

Cat. No.	CB12245A
Input Data Nominal Input Voltage (2 x VAC) Input Voltage range (VAC) Inrush Current (Vn and In Load) I2t Frequency Input Current Internal Fuse External Fuse (recommended)	115 ~ 230 ~ 277 VAC 90 ~ 305 VAC $\leq 16 \text{ A} \leq 5 \text{ msec.}$ 47 ~ 63 Hz $\pm 6\%$ 2.4 A - 115 VAC; 1.2 A 230 VAC 4 A 10 A (MCB curve B)
Battery Output (Battery Care) Boost charge (25°C) (typ. at I_n) Max. time Bust Charge (typ. at I_n) Min. time Bust Charge (typ. at I_n) Trickle charge (25°C) (typ. at I_n) Recovery Charge Charging. Max I_{batt} (I_n) Efficiency (50% - I_n) Charging current limiting I_{adj} 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)	14.4 VDC / 28.8 VDC (jumper section) 15 h 4 min. 13.75 VDC / 27.5 VDC 2 ~ 7 VDC / 2 ~ 16 VDC 6A@12V / 5A@24V DC 90% 20 – 100 % I_n $\leq 5 \text{ mA}$ 3 stage Yes Yes Yes Yes 2,23;2,25;2,27;2,3; 1,41–1,5 (20 elem.)
General Data 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) 45x105x100 mm (1.78 x 3.94 x 3.94 in.) 0.3 Kg (0.65 lbs) approx.
Climate Data Ambient temperature (operation) De Rating $T_a > 50^\circ\text{C}$ Ambient temperature Storage Humidity at 25°C no condensation Cooling	-25 - +70°C (-13~158°F) - 2.5%(I_n) / °C -40 - +85°C (-40~185°F) 95% to 25°C Auto Convection
Norms and Certifications 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
Signal Output (free switch contact) Main or Backup Power Low Battery Fault Battery	Yes Yes Yes
Type of Signal Output Contact 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

CB12245A Battery Charger

Technical Features

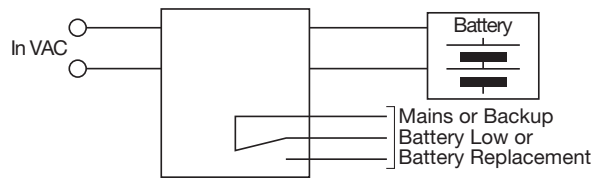
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CB Charging Diagram

