



BATTERY CHARGERS

HIGH FREQUENCY CHARGERS

AQ-TRON®

HIGH FREQUENCY BUILT-IN CHARGER AQHF24-30FC G2

**UP 30%
ENERGY
SAVINGS!**

**FAN
COOLED**



TECHNICAL PECIFICATIONS

- Main input 230VAC $\pm 10\%$ 50-60Hz
- High frequency single-phase battery charger with Switching Technology
- Configurable for lead acid, gel, AGM or Lithium batteries (opt.)
- Current regulation accuracy $\pm 1A$
- Voltage regulation accuracy $\pm 0,1V$
- Efficiency $\geq 85\%$
- Microprocessor controlled charging process
- Cooling forced ventilation
- Signalling LEDs for charge level and faults
- Thermal protection with internal probe
- Protection against polarity reversals
- Thermal probe for battery (opt.)
- Possibility of on-board installation with remote LEDs (opt.)
- Possibility of external programming by remote card PR20 (opt.)
- Conformity to European normative CE-marking
- Dimensions: 258 x 123 x 80mm.
- Weight: 2Kg.

AQ Tron® is constantly dedicated to the research and development of high technology battery chargers. From this point of view we have developed a new generation of high frequency charger with inverter technology which is able to supply a constant output current independently from the main supply power voltage. It is very important to maintain a constant current during the first step of the charging process, with aim to speed-up the charge of the battery and to prolong the life-span.

Although the charging current of the first step of charge is 15-20% less than a traditional low frequency battery charger, with a constant current it is possible to charge in the battery the same energy amount with less time. It is also important to keep an accurate measurement of the battery voltage to ensure that the process of charge is correctly carried out with the correct voltage relative to the battery kind.

For this purpose the battery charger is equipped with a PCB board with microcontroller which optimizes the charging process. The microcontroller also points out any step that is acting and any anomaly that may occur. The technology used on this battery charger allows to obtain high output power in a compact housing.

It is possible to select up to 8 various types of charging curves to charge different kind of batteries: Lead-Acid, GEL, AGM, ...

Battery Charger Output current (A)	Battery capacity (Ah/24h)
10	65 - 100
15	100 - 150
20	130 - 200
25	160 - 250
30	170 - 280



▶ **BAT/48415**

EXTERNAL LED



▶ **BAT/48417**

REMOTE CONTROL - With the remote card it is possible to view: charging current, Volt, charging Ah and the last 20 charge sessions & anomalies. It is also possible to set new charging parameters.

PERFECT FOR:
 GOLF CARTS
 INDUSTRIAL MACHINES
 INDUSTRIAL CLEANING

HIGHFREQUENCY REPLACEMENT BATTERY CHARGER



BAT/47711

- UL-approved, CE-certified
- Programmed for 36 V
- User manual with troubleshooting codes
- Set to flooded lead-acid batteries (AGM or Gel settings available on request)
- Easy-to-read red, yellow, green lights indicate charging state
- Lightweight (5,4 kg) and portable with convenient handle (dimensions: 270 x 190 x 120 mm)
- Float feature allows for batteries to maintain full charge at the end of charge cycle
- Choose DC-connectors for various golf carts including 36 V/48 V E-Z-GO, 36/48 V Club Car & 48 V Yamaha
- Begin charge cycle with batteries as low as 2 volts

CONNECTION CABLES FOR GOLF CARTS



BAT/47712



BAT/47713



BAT/47714



BAT/47715



BAT/47716



BAT/47717



BAT/47718

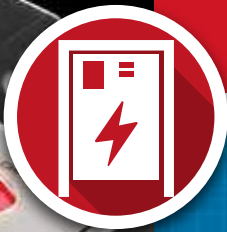
VEHICLE	36 V E-Z-GO	48 V E-Z-GO	48 V E-Z-GO TXT	36 V Club Car/Yamaha G9, G14, G16	48 V Club Car	Yamaha G19, G22	TDRE Yamaha
REF connection cable	BAT/47712	BAT/47713	BAT/47714	BAT/47715	BAT/47716	BAT/47717	BAT/47718

WITH PROGRAMMABLE DIPSWITCH

Battery voltage	Charging current	Battery range (5Hr rate)		Battery range (20Hr rate)
		8 - 9 hours charging time	10 - 12 hours charging time	
12V	15A	80 ÷ 110	100 ÷ 150	130 ÷ 185
12V	20A	95 ÷ 120	120 ÷ 195	150 ÷ 240
12V	25A	120 ÷ 160	180 ÷ 258	220 ÷ 315
12V	30A	145 ÷ 180	200 ÷ 280	245 ÷ 350
24V	15A	80 ÷ 110	100 ÷ 150	130 ÷ 185
24V	20A	95 ÷ 120	120 ÷ 195	150 ÷ 240
24V	25A	120 ÷ 160	180 ÷ 258	220 ÷ 315
24V	30A	145 ÷ 180	200 ÷ 280	245 ÷ 350
36V	15A	80 ÷ 110	100 ÷ 150	130 ÷ 185
36V	20A	95 ÷ 120	120 ÷ 195	150 ÷ 240
36V	25A	120 ÷ 160	180 ÷ 258	220 ÷ 315
48V	15A	80 ÷ 110	100 ÷ 150	130 ÷ 185
48V	20A	95 ÷ 120	120 ÷ 195	150 ÷ 240



BATTERY CHARGERS



AQ-TRON IP66 High Frequency Battery Chargers



WATERPROOF HIGH FREQUENCY BUILT-IN CHARGER IP66 FOR OPEN LEAD-ACID & GEL BATTERIES

- Cooling through fins, CE approval
- LEDs indicate the charge status and display error messages
- Modern high frequency technology with microprocessor control
- Automatic selection of AC input: 90~132Vac or 180~264Vac 50/60Hz
- Perfect charge curve - constant current / constant voltage (IU1U2oB)
- Protected against short circuit, reversed polarity, too high and too low AC-voltage, overheating. Without external fuses and with an automatic reset.
- Control of the charge time and automatic detection of faulty batteries (dV/dt), automatic switch off with faulty cells (18 hours)
- Start up at very low battery voltage, charging batteries which are deeply discharged (1~2 Vdc)
- Efficiency > 85%
- Drive's safety relay (lock-out) 20A

Reference	V dc	Curr Dc	Watt	Lock	Curve	Battery cap.		 X x Y x H			Kg	Photo
						min Ah C20	max Ah C20					
AQHF12-15	12	15A	230	y	wet/gel	65	215	219	152	81	2,5 kg	3
AQHF24-11	24	11A	300	y	wet/gel	55	160	219	152	81	2,5 kg	3
AQHF24-19	24	19A	600	y	wet/gel	100	275	196	180	165	6,5 kg	4
AQHF24-40	24	40A	1200	y	wet/gel	200	500	306	180	165	8,5 kg	5
AQHF24-25	24	25A	750	y	wet/gel	125	355	196	180	165	5 kg	4
(*)AQHF36-20	36	20A	900	y	wet/gel	100	290	306	180	165	8,5 kg	5
(*)AQHF48-17	48	17A	1000	y	wet/gel	90	240	306	180	165	8,5 kg	5
(*)AQHF48-25	48	25A	1500	y	wet/gel	120	355	286	180	165	8,5 kg	5

(*) option: movable display

INDUSTRIAL BATTERY CHARGERS



IC-SERIES

Capable of charging lead acid (wet, AGM, gel) and lithium battery chemistries, these chargers are available in on- and off-board configurations. Optional CAN bus communication ensures seamless machine integration and AC/DC cabling is completely customizable. Applications include: aerial work platforms, scissor lifts, lift trucks, floor care machines, utility vehicles, motorcycles, scooters and golf cars.

▶ LAD/IC650 - 650 W



DC Output	24 VDC	36 VDC	48 VDC
Max. DC Output voltage	36V	54V	72V
Max. DC Output current	27,1 A	18,1 A	13,5 A
Maximum DC Output power	650 W		
Battery type	Lead acid (Wet/AGM/GEL), lithium		
Dimensions	25,2 x 18,6 x 8 cm		
Weight	< 3 kg		
Enclosure	IP66		

FEATURES

- Optional CAN bus communication for machine integration or lithium BMS
- Multi-color LED indicator for AC source, battery status, charging, error, fault
- Numeric display for charge profile, alarm/fault codes
- Field programmable with up to 25 charge profiles
- Auto-recharge for low voltage in maintenance mode
- OEM customizable, field replaceable cable design
- Optional carrying handle

FEATURES

- Optional CAN bus communication for machine integration or lithium BMS
- Multi-color LED indicator for AC source, battery status, charging, error, fault
- Numeric display for charge profile, alarm/fault codes
- Field programmable with up to 25 charge profiles
- Auto-recharge for low voltage in maintenance mode
- OEM customizable, field replaceable cable design

▶ LAD/IC900 - 900 W



DC Output	24 VDC	36 VDC	48 VDC
Max. DC Output voltage	36V	54V	72V
Max. DC Output current	37,5 A	25,0 A	20,0 A
Maximum DC Output power	900 W		960 W
Battery type	Lead acid (Wet/AGM/GEL), lithium		
Dimensions	33,5 x 17,9 x 10,2 cm		
Weight	4,4 kg		
Enclosure	IP66		

▶ LAD/IC1200 - 1200 W



DC Output	24 VDC	36 VDC	48 VDC
Max. DC Output voltage	36V	54V	72V
Max. DC Output current	50,0 A	33,3 A	25,0 A
Maximum DC Output power	1200 W		
Battery type	Lead acid (Wet/AGM/GEL), lithium		
Dimensions	33,5 x 17,9 x 10,5 cm		
Weight	4,1 kg		
Enclosure	IP66		

FEATURES

- Optional CAN bus communication for machine integration or lithium BMS
- Multi-color LED indicator for AC source, battery status, charging, error, fault
- Numeric display for charge profile, alarm/fault codes
- Field programmable with up to 25 charge profiles
- Auto-recharge for low voltage in maintenance mode
- OEM customizable, field replaceable cable design
- Integrated carrying handle



BATTERY CHARGERS

INDUSTRIAL BATTERY CHARGERS

RC-SERIES

A robust battery charger certified for use on residential and industrial electric applications. Versatile CANopen and J1939 CAN bus features allow OEM's to extract charger status, update algorithm and software, and view fault and error logs. Suitable for applications in floorcare, utility vehicles, aerial work platforms and material handling.

▶ LAD/RC900 - 900 W



FEATURES

- CAN bus communication for machine telematics / Battery Management System (BMS) integration
- Safety interlock feature to prevent vehicle from operation while charging
- Field programmable with up to 25 charge algorithms
- Auto-recharge for low voltage in maintenance mode
- Factory terminated / field selectable CAN bus termination option
- Optional features include status LED, remote LED, battery temperature sensing

DC Output	36 VDC	48 VDC
Max. DC Output voltage	54V	72V
Max. DC Output current	28,0 A	21,0 A
Maximum DC Output power	900 W	
Battery type	Lead acid (Wet/AGM/GEL), lithium	
Dimensions	30,0 x 17,9 x 8,0 cm	
Weight	3,68 kg	
Enclosure	IP66	

▶ LAD/RC1200 - 1200 W



FEATURES

- CAN bus communication for machine telematics / Battery Management System (BMS) integration
- Safety interlock feature to prevent vehicle from operation while charging
- Field programmable with up to 25 charge algorithms
- Auto-recharge for low voltage in maintenance mode
- Factory terminated / field selectable CAN bus termination option
- Optional features include status LED, remote LED, battery temperature sensing

DC Output	36 VDC	48 VDC
Max. DC Output voltage	54V	72V
Max. DC Output current	36 A	27,5 A
Maximum DC Output power	1200 W	
Battery type	Lead acid (Wet/AGM/GEL), lithium	
Dimensions	30,0 x 17,9 x 8,0 cm	
Weight	3,60 kg	
Enclosure	IP66	

ILC-SERIES

A compact, sealed, lightweight industrial and motive lithium battery charger. Designed to optimally charge lithium battery systems of any lithium chemistry used on electric vehicles including scooters, low-speed vehicles, boom lifts, automated guided vehicles, and sport and utility vehicles. The charger is available in on and off-board configurations. CAN bus communication with a battery management system ensures seamless machine integration to grant original equipment manufacturers (OEMs) with flexibility in their design and deployment.

▶ LAD/ILC900 - 900 W

FEATURES

- CAN bus communication for machine BMS/telematic integration
- Meets voltage touch-safe regulations for EU electric vehicle
- Optional multi-colored remote LED indicator for battery status, charging, error and fault indication
- OEM customizable, field replaceable cable design
- Field programmable with up to 25 charge profiles
- OEM selectable CAN bus termination
- Interlock prevents vehicle from moving while charging.
- Convection cooled



DC Output	57 V max / 18 - 57 VDC
Battery Type	Lithium (9-15 cells in series)
Max. DC Output current	27,0 A (18-36VDC)
Maximum DC Output power	900 W (36-57VDC)
Dimensions	30,0 x 17,9 x 8,0 cm
Weight	3,68 kg
Enclosure	IP66

▶ LAD/ILC1200 - 1200 W

FEATURES

- CAN bus communication for machine BMS/telematic integration
- Multi-colored remote LED indicator for battery status, charging, error and fault indication
- Field programmable with up to 25 charge profiles
- Meets touch-safe voltage regulations for EU electric vehicle
- Auto-recharge for low voltage in maintenance mode
- OEM customizable, field replaceable cable design
- Interlock prevents vehicle from moving while charging.



DC Output	57 V max / 36 - 57 VDC
Max. DC Output current	33,3 A
Maximum DC Output power	1200 W
Battery type	Lithium (9-15 cells in series)
Dimensions	30,0 x 17,9 x 8,0 cm
Weight	3,65 kg
Enclosure	IP66



BATTERY CHARGERS

INDUSTRIAL BATTERY CHARGERS

QUIQ1000 FEATURES

- Battery temperature monitor
- Multi-color LED indicator for >80% charge, full charge, fault
- Field programmable with up to 10 QuiQ charging profiles
- Download charge / event data using QuiQ Programmer

QUIQ1500 FEATURES

- Battery temperature monitor
- Multi-color LED indicator for >80% charge, full charge, fault
- Field programmable with up to 10 charging profiles
- Download charge / event data using QuiQ Programmer
- Auto-configures output power to 1200 watts when connected to 120 VAC to prevent nuisance breaker trips

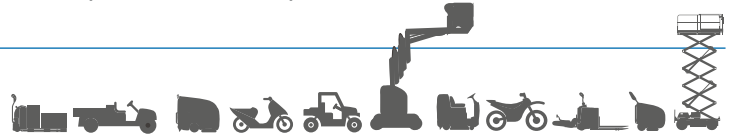
QUIQDCI FEATURES

- Battery temperature monitor
- Multi-color LED indicator for >80% charge, full charge, fault
- Field programmable with up to 10 QuiQ charging profiles
- Download charge / event data using QuiQ Programmer

QuiQ-SERIES

The QuiQ 1000 is a highly durable on- or off-board charging solution that operates on any single-phase grid worldwide with a 93% peak efficiency. The charger can store 10 lab-validated charge profiles for specific brands or amp-hour ranges of lead acid and lithium motive battery packs, to assist customers in achieving battery charging flexibility. Applications include aerial work platforms, floor care machines, lift trucks, motorcycles, scooters, and utility vehicles.

LAD/QUIQ100 - 1000 W



DC Output	24 VDC	36 VDC	48 VDC	72 VDC	96 VDC
Max. DC Output power	695 W	875 W	1000 W	1000 W	945 W
Max. DC Output current	25 A	21 A	18 A	12 A	8,5 A
Battery type	Lead acid (Wet/AGM/GEL), lithium				
Dimensions	28,0 x 24,6 x 11,0 cm				
Weight	<5 kg				
Enclosure	IP66				

LAD/QUIQ1500 - 1500 W

The Delta-Q QuiQ 1500 W Battery Charger is a flexible charging solution for industrial motive applications, including 48 V and 72 V specialty golf and utility vehicles, and 48 V aerial boom lifts. The QuiQ 1500 provides up to 30% faster charging times compared to the QuiQ 1000 in an identical mechanical design. Applications include boom lifts, specialty golf vehicles, and utility vehicles.



DC Output	48 VDC	48 VDC	72 VDC	72 VDC
Max. DC Output power	1200 W	1500 W	1200 W	1500 W
Max. DC Output current	25 A	30 A	17 A	20 A
Battery type	Lead acid (Wet/AGM/GEL), lithium			
Dimensions	28,0 x 24,5 x 11,0 cm			
Weight	<5 kg			
Enclosure	IP66			

LAD/QUIQDCI - 1000 W

The QuiQ-dci combines the technology of a QuiQ 1000 battery charger with an integrated DC-DC power converter for the operation of vehicle accessories, such as lights, turning signals and entertainment devices. Integrating the two components saves on system integration, sourcing and inventory costs. The QuiQ-dci is well-suited as a charger for electric utility vehicles and low-speed electric vehicles.



DC Output	48 VDC	72 VDC	96 VDC
Max. DC Output power	1000 W	1000 W	945 W
Max. DC Output current	18 A	12 A	8,5 A
Battery type	Lead acid (Wet/AGM/GEL), lithium		
Dimensions	28,0 x 24,6 x 11,0 cm		
Weight	<6 kg		
Enclosure	IP66		
Converter DC	48 VDC	72 VDC	96 VDC
Maximum Power	400 W		