



BATTERY CHARGERS

HIGH FREQUENCY CHARGERS

AQ-TRON®

HIGH FREQUENCY BUILT-IN CHARGER AQHF24-30FC G2

**UP 30%
ENERGY
SAVINGS!**

**FAN
COOLED**



TECHNICAL SPECIFICATIONS

- 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/5h)
10	65 - 100
15	100 - 150
20	130 - 200
25	160 - 250
30	170 - 280



▶ **BAT/48415**

EXTERNAL LED



▶ **BAT/48416**

THERMAL PROBE



▶ **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

WATERPROOF HIGH FREQUENCY CHARGER

- One profile : the correct charging curve is programmed in the factory and will avoid mistakes when assembled
- Compatible charge curve for mostly all standard batteries.
Version 'WET' : compatible for the most Semi-Traction, Monoblocs and Deep-Cycles
Version 'AGM' : compatible for all Lead Carbon (DLC) and AGM (DAB) batteries
Version 'GEL' : compatible for GEL (DGY) batteries
Version 'Li-Ion' : compatible for Li-Ion batteries
Other profiles possible on demand
- Operating Temperature: from -30°C to +65°C
- Storage Temperature: from -40°C to +95°C
- Humidity: from 5% to 95%
- Altitude: up to 2000 mt
- Protection Grade: IP67
- V in = 180 - 264 V AC



INCLUSIVE

- Battery temperature sensor : the temperature of the battery will influence the charging curve and will increase the safety of the charging process and life time of the battery
- Remote charge indicator
- Interlock safety system : will prevent the vehicle from starting when the battery charger is still connected to the grid.



IP67



On-board use



Safe and reliable



High efficiency



Ideal for every battery



Low batteries



Plug-n-play



PFC and Soft Start



Module 1



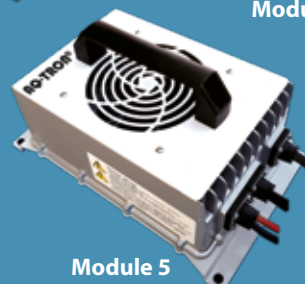
Module 2



Module 3



Module 4



Module 5

INDUSTRIAL BATTERY CHARGERS

WATERPROOF HIGH FREQUENCY CHARGER

IP67

MODELS

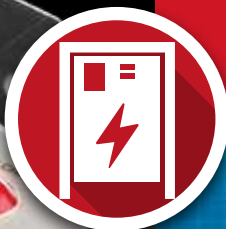
Every housing of these chargers has a specific design according to the control card that is used. Therefore, so an optimal heat dissipation, even in extremely hot and humid environments, is assured. Severe tests were applied and a long lasting lifetime of the charger is guaranteed.

AQ-TRON®

Model	Voltage	Current	Power Supply	Battery Capacity Ah (CS)			Module	Dimensions (mm)
			Amp (A)	8h	10h	12h		
AQHF12-10 WP	12 V	10 A	2	80	100	120	1	187 x 122 x 70
AQHF12-15 WP		15 A	2	120	150	180	1	187 x 122 x 70
AQHF12-20 WP		20 A	2	160	200	240	1	187 x 122 x 70
AQHF12-25 WP		25 A	2	200	250	300	2	210 x 128 x 79
AQHF24-10 WP	24 V	10 A	2	80	100	120	1	187 x 122 x 70
AQHF24-15 WP		15 A	2	120	150	180	1	187 x 122 x 70
AQHF24-20 WP		20 A	3	160	200	240	1	187 x 122 x 70
AQHF24-25 WP		25 A	3	200	250	300	2	210 x 128 x 79
AQHF24-30 WP		30 A	4	240	300	360	3	210 x 142 x 78
AQHF24-35 WP		35 A	4	280	350	420	4	210 x 168 x 88
AQHF24-40 WP		40 A	5	320	400	480	4	210 x 168 x 88
AQHF24-50 WP		50 A	6	400	500	600	4	210 x 168 x 88
AQHF36-10 WP	36 V	10 A	2	80	100	120	2	210 x 128 x 79
AQHF36-15 WP		15 A	2	120	150	180	2	210 x 128 x 79
AQHF36-20 WP		20 A	4	160	200	240	2	210 x 128 x 79
AQHF36-25 WP		25 A	5	200	250	300	2	210 x 128 x 79
AQHF36-30 WP		30 A	6	240	300	360	3	210 x 142 x 78
AQHF36-50 WP		50 A	9	400	500	600	5	315 x 200 x 117
AQHF48-12 WP	48 V	12 A	3	80	100	120	2	210 x 128 x 79
AQHF48-15 WP		15 A	4	120	150	180	2	210 x 128 x 79
AQHF48-20 WP		20 A	6	160	200	240	2	210 x 128 x 79
AQHF48-25 WP		25 A	8	200	250	300	2	210 x 128 x 79
AQHF48-30 WP		30 A	8	240	300	360	4	210 x 168 x 88
AQHF48-35 WP		35 A	10	280	350	420	4	210 x 168 x 88
AQHF48-40 WP		40 A	10	320	400	480	5	315 x 200 x 117
AQHF48-50 WP		50 A	12	400	500	600	5	315 x 200 x 177
AQHF48-80 WP		80 A	18	450	560	750	7	419 x 270 x 110
AQHF72-10 WP	72 V	10 A	4	80	100	120	2	210 x 128 x 79
AQHF72-15 WP		15 A	6	120	150	180	2	210 x 128 x 79
AQHF72-20 WP		20 A	8	160	200	240	3	210 x 142 x 78
AQHF72-25 WP		25 A	8	200	250	300	4	210 x 168 x 88
AQHF72-30 WP		30 A	11	240	300	360	5	210 x 200 x 117
AQHF72-35 WP		35 A	13	280	350	420	6	348 x 189 x 94



Each type available with AGM, WET, GEL or Lithium profile. Other profiles possible on demand. If you wish to order a charger with a specific profile, you can put "AGM", "WET", "GEL" or "LFP" behind the reference. Example: AQHF48-25 WP AGM.




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

HIGH FREQUENCY CHARGERS

AQ-TRON®

MULTIVOLTAGE RECOGNITION

Recognizes automatically and adapts the voltage of the connected battery

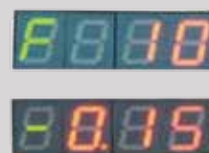
TECHNICAL FEATURES

- 1phase 230Vac \pm 10% (HFK), 50-60Hz / 3phase 400Vac \pm 10% (HFT), 50-60Hz
- Full programming through integrated Display
- 2 desulphating programs with constant current available (dSa: automatic V detection + timer; dSM: manual V setting + timer) + 1 charging profile program suitable for any battery type (PzS, PzV, AGM, etc.)
- Optional: Stand-alone holder.

	LAD/AQ-MULTI/1F	LAD/AQ-MULTI/3F
2V	//	30A
6V	10A	15A
8V	10A	15A
10V	10A	65A
12V	10A	65A
24V	50A	65A
36V	50A	65A
48V	50A	50A
60V	15A	65A
72V	15A	65A
80V	25A	40A
96V	25A	//



OPTIONAL



Easy status detection: NAVIGATOR
Full programming access
timer: countdown.



Antidrop cabinet
Special air flux filter.

VBATT	MAXA	NOTES
1-5V	30A	VBATT \geq 2V
6V	100A	
> 6V - 12V	120A	VBATT \geq 8V
> 12 - 96V	150A	



BAT/48313 - 150 USB DISCHARGER

TECHNICAL FEATURES

- Ac Mains: 1phase 230Vac \pm 10% / 50-60Hz
- Battery Voltage from 2V to 80V
- Discharging Current up to 150A
- Integrated USB door for data storage/downloading and dedicated software
- Visualization and Setting through integrated LCD Display
- Wheels for easy transport
- Operative temperature: -10 $^{\circ}$ C $+$ 40 $^{\circ}$ C
- Parallel connection up to 3 modules: up to 450A discharging current.
- Dimensions: L 470 x D 310 x H 700 - 32 Kg.

V	A
2V	30A
6-8V	15A
10-36V	65A
48V	50A
60-72V	65A
80V	40A



BAT/48314 - REGENERATIVE STATION

TECHNICAL FEATURES

- Ac Mains: 3phase 400Vac \pm 10% / 50-60Hz
- Battery Voltage from 2V to 80V
- Charging Current up to 65A
- Full programming through integrated LCD display
- 4 default programs available: light - soft - medium - deep
- Possibility to edit own charging profiles and desulphating cycles for any battery type (PzS, PzV, AGM ...)
- Operative temperature: -10 $^{\circ}$ C $+$ 40 $^{\circ}$ C
- Dimensions: L 650 x D 310 x H 770 - 28 Kg.



BATTERY CHARGERS

HIGH FREQUENCY CHARGERS

AQ-TRON® UNIVERSAL CYCLERS

AQ-TRON cyclers are the ideal equipment for companies dealing with battery regeneration and maintenance.

AQ-TRON cyclers are composed of a 160A discharger/tester and an HF Universal battery charger, which can be either the 8 kW or 16 kW version, depending on the battery capacity. AQ-TRON cyclers can be used to:

- perform automatic charge and discharge cycles
- desulphate batteries restoring their full efficiency
- assess the actual capacity of a battery

The cyclers are programmed independently for the discharge and testing phase and for the charging phase.

The cyclers are supplied complete with two software programs, HFView and BLTView, which allow you to:

- program the BLT unit and the HF battery charger from your PC
- download the data of the charge and discharge cycles to your PC
- display the voltage and current diagrams
- prepare reports with the results obtained from the cycles performed, in terms of:
 - actual capacity
 - efficiency
 - maximum end-charge voltage

The easily settable BLT unit (which can be programmed to perform efficiency tests on PL-acid, gel, AGM, NiCd or NiMH batteries) and HF Universal battery charger (which can charge PL-acid, Gel, AGM, NiCd, NiMH or LiPO batteries), make AQ-TRON cyclers an extremely versatile and universal-use instrument.



▶ LAD/CYCLER16KW

Discharger BLT 96V 160A + charger HF8-TX
Box C: 950 x 1170 x 63 mm

Model	Components		Box
LAD/ CYCLER 8kW	BLT 96V 160A	4 - 96V 2 - 160A	C
	Battery Charger HF8-T	6 - 80V (96V) 2 - 80A (65A)	
LAD/ CYCLER 16kW	BLT 96V 160A	4 - 96V 2 - 160A	C
	Battery Charger HF8-TX	6 - 80V (96V) 2 - 160A (130A)	



▶ BAT/47461

Wheeled support for cycler 16kW



HIGH FREQUENCY CHARGERS

► BAT/48163 - SERVICE CHARGER

- ➔ Adjustable charger and power supply
- ➔ For all types of batteries
- ➔ Microcomputer controlled
- ➔ Disulphates sulphated batteries

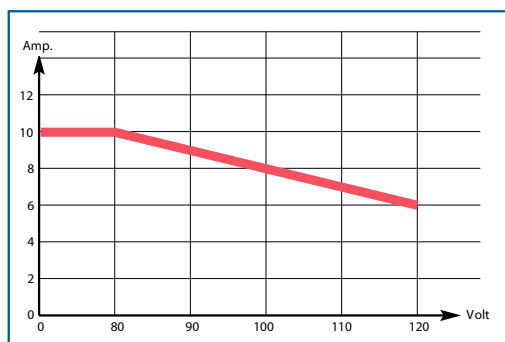


TECHNICAL FEATURES

- Power supply from 0–120 V and 10 A
- Can save batteries that have been discharged for a long time
- Freely adjustable voltage limit
- Freely adjustable current limit
- Can simulate a battery when fault finding on a charger
- Assist to start charger when battery is deeply discharged
- Voltage and current levels to be read from separate clear displays

Areas of use

SMP can be used in a battery workshop to disulphate batteries that has been deeply discharged or not charged for a long time. Thanks to the low weight (1.6 kg) and small dimensions it is also very useful in service workshops and by service technicians who works with batteries, chargers and forklift trucks.



Technical specification	BAT/48163
Mains supply:	50–255 V, (50–200 power limited), 45–65 Hz
Current draw:	max 4,5 A
Power factor:	~1 (PFC)
Max. current:	10 A
Max. voltage:	120 V
Max. power:	800 W
Max. ripple out:	30 mV RMS
Efficiency:	> 86%
Frequency:	> 100 kHz
Cooling:	Temperaturstyrd fläkt
Weight:	1,6 kg
Dimension:	258 x 136 x 89 mm
Protection:	IP20, (Electrically II, with or without earth)
Cables:	One set of laboratory cables is included
Service chargers 12V/50A, 36V/30A, 54V/20A and 72V/15A are also available.	
Characteristics At least 200 V main supply is needed for full power of 800 W.	

WORKSHOP CHARGERS YOUR ADVANTAGES

Inverter energy efficient battery charger is a new kind of advanced pulse battery charger which comes with yellow-green backlit LCD display and can automatically detect, analyze, charge and maintain batteries, and intelligent programming.

- Over-voltage and over-current protection, power down alarm, short circuit protection, reverse polarity protection, high temperature alarm and auto repair battery during charging process
- Detect, analyze, charge and maintain different types of batteries, applying to advanced charging devices at garages and repair workshops.
- Used in the maintenance, detection and electronic control system programming process of cars in static state to prevent damage of control elements and loss of data caused by cars running out of battery during programming or other detection processes.
- With reverse connection reminder and no touch spark, the charger is applicable to all battery technologies to perform charging curves and charging detection.



► BAT/48292 WORKSHOP CHARGER 100A

Intelligent Programming Charge Power - 100A

- Input voltage: AC220-240V
- Input power: 1500W
- Frequency: 50/60 Hz
- Maximum Charging Current : 100A
- Charging Voltage: 12V
- Battery Capacity: 10 ~ 1200Ah
- Programming Mode: 2~30V/2~100A

► BAT/49452 WORKSHOP CHARGER 150A

Intelligent Programming Charge Power - 150A

- Input voltage: AC220-240V
- Input power: 2400W
- Frequency: 50/60 Hz
- Maximum Charging Current : 150A
- Charging Voltage: 12V
- Battery Capacity: 10 ~ 1200Ah
- Programming Mode: 2~30V/2~150A



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INVERTER/CHARGER COMBINATION

The inverter charger combination is designed for off grid and power back up applications providing True Sine Wave Inverter, Battery Charger, AC transfer switch and Power Management in one unit. It can be connected to either grid or generator to compose power system for the most demanding applications.

PURE SINE WAVE INVERTER

- Distortion free sine wave AC power for household appliance and sensitive electronics without worry, such as TV, stereo, laptop. Or, make your appliances work smoother, cooler and more efficient, such as fridge, power tools and microwave.
- Provided with outstanding peak power in together with super fast protection make it suitable heavy inductive load.
- High efficiency gets most out of your reserved energy.
- Low consumption power could effectively save the precious energy.
- Adjustable low voltage disconnect level suitable for various applications.



SOPHISTICATED BATTERY CHARGER

- Powerful charger with multi stages charging algorithm.
- Generator mode make it suitable to work with various kinds of generator.
- Power factor corrected battery charging.
- Charger power adjustable.
- Temperature compensated charging.
- Various battery types: AGM, GEL, Open-Lead-Acid.

AUTOMATIC TRANSFER SWITCH

- In even grid failure, the output will switch to inverter automatically and take over the power supply to the load without interruption.

POWER MANAGEMENT

- Starting generator when battery voltage runs low.
- Along with battery running low, it could supply various signals for customer to have a smart load management.

Model	BAT/44911	BAT/44912	BAT/44913	BAT/44914	BAT/44915
Nominal DC voltage	12 Volt				
Inverter continuous power (W at 25°C)	600	1000	1500	2000	3000
Charger max current (A)	25	40	60	80	120
De-sulphation	15.5V for 30 mins				
Circuit breaker - charger (A)	5	10	10	15	30
Circuit breaker - output (a)	5	10	10	15	30
Size	457 x 190 x 130		557 x 220 x 180		720x220x180
Weight (kgs)	9.5	10.5	18	20	28

Model	BAT/44916	BAT/44917	BAT/44918	BAT/44919	BAT/44920	BAT/44921	BAT/44922
Nominal DC voltage	24 Volt						
Inverter continuous power (W at 25°C)	600	1000	1500	2000	3000	4000	5000
Charger max current (A)	15	20	30	40	60	80	100
De-sulphation	31V for 30 mins						
Circuit breaker - charger (A)	5	10	10	15	30	30	30
Circuit breaker - output (a)	5	10	10	15	30	30	30
Size	457 x 190 x 130		557 x 220 x 180			720 x 220 x 180	
Weight (kgs)	9.5	10.5	18	20	24.5	34.5	38

Model	BAT/44923	BAT/44924	BAT/44925	BAT/44926	BAT/44927
Nominal DC voltage	48 Volt				
Inverter continuous power (W at 25°C)	2000	3000	4000	5000	6000
Charger max current (A)	20	30	40	50	60
De-sulphation	62V for 30 mins				
Circuit breaker - charger (A)	15	30	30	30	40
Circuit breaker - output (a)	15	30	30	30	40
Size	457 x 190 x 130		557 x 220 x 180		720x220x180
Weight (kgs)	18.5	22.5	34.5	38	42