

ZEPIA Energy

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ZC-CHAMP 1230

12V / 30A champ family



Art 003398X

General description

This ZEPIA Energy product is a high efficient, intelligent and very compact battery charger. Suitable for all Lead acid batteries. It is a switch mode design and includes the latest component and technology in power conversion. The internal electronics controls the charging phase. The charging phases are monitored and adjusted continuously during the charging process.

The product is suitable both in marine and automotive applications.

Features

- Latest MosFET technology
- High efficiency, Cool running normal operation
- Adaptable to different battery types
- Small and easy to install

Part number / order information

ZEPIA Energy part number	Specification
003398X	12V / 30A 400W
003399X	24V / 20A 500W (available quarter 1 / 2008)

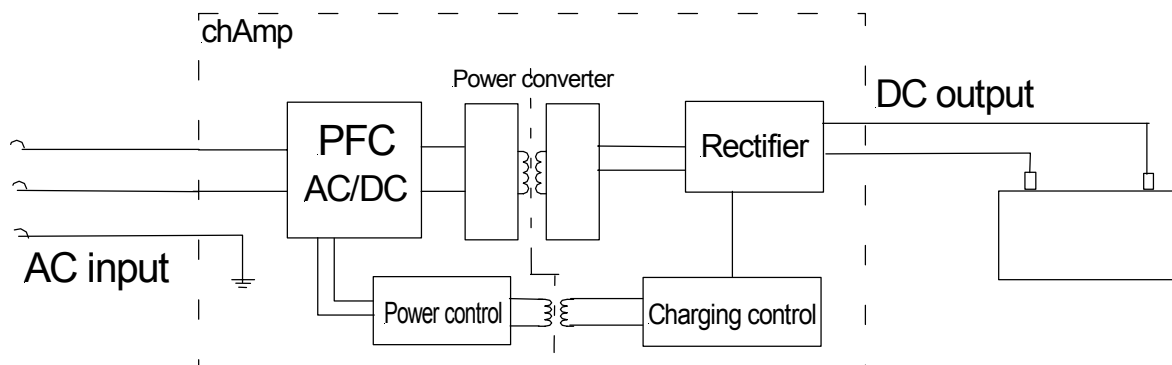
Numbers shows the basic standard models
Different charging algorithms or cables results into other article numbers.

Theory of operation

The ZC-Charger/ chAmp family is one of the most compact battery chargers available.

The input AC voltage is feed through a passive PFC stage and converted into a DC Voltage of approx 400V. A high frequency switch into a low dc voltage does the power conversion. This voltage is controlled by the internal micro controller and rectified to a correct charging voltage on output.

Block Diagram



Charging algorithm

The charging in standard program is indicated as follows:

Step 1, the bulk phase is indicated with the red LED.

This indication is kept through step 2.

When the current is below 10% of the maximum output the

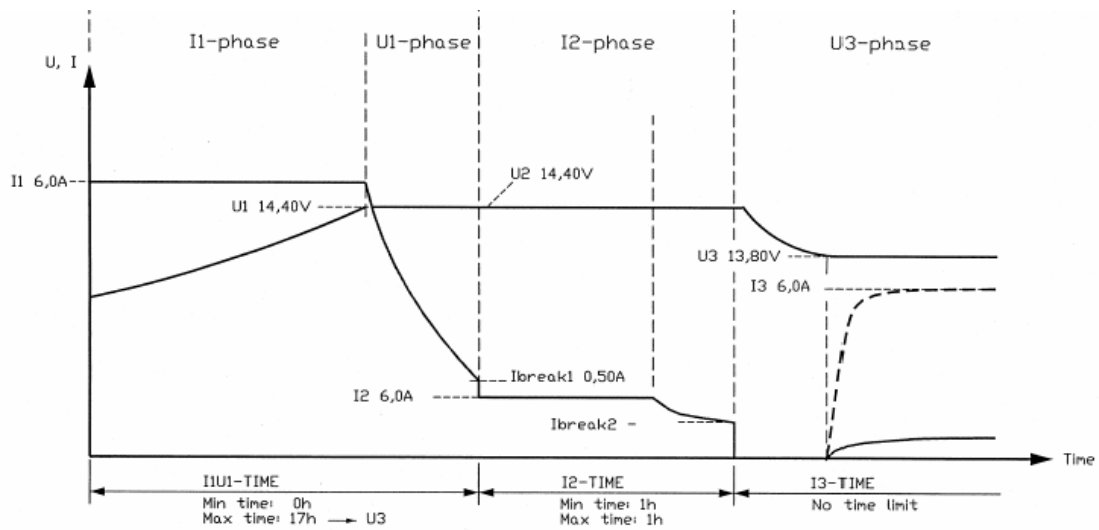
charger goes into step 3 and the LED turns yellow. After

approx 2 hours the yellow LED switches into green. The green

maintain illuminated as long as the charger is connected to mains.

If the parallel consumption is higher than the maximum output current the system voltage will drop below 12,7V (25,4) the charger switches to bulk charge and the LED will turn red.

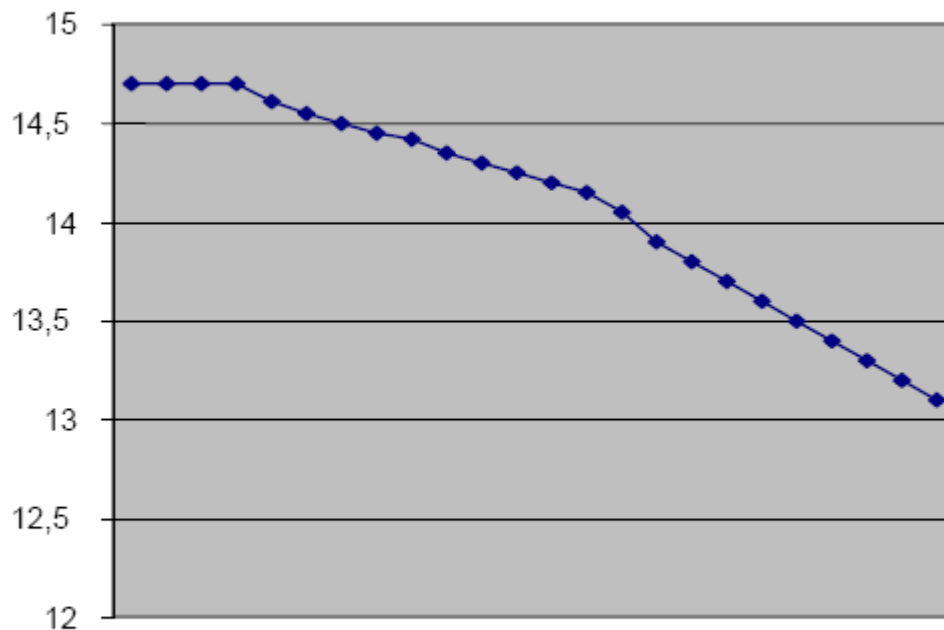




Temp sense

Diagram shows the effect on output voltage if temp sense is connected

Utspänning



Temperatur -20 -10 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

3mv / cell / degree

Descriptions of features

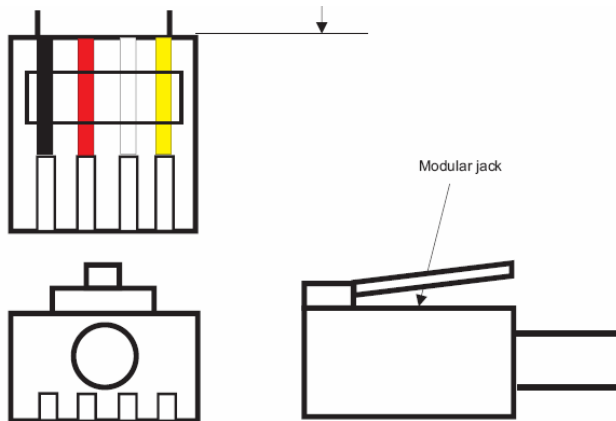
The complete electronics is mounted in a plastic double insulated enclosure. IP21. The electronics is coated by a thick layer of lacquer and will thereby withstand salty and damp environmental.

Before delivery different charging algorithms can be applied and customized chargers can be made upon request.

The standard programming is suitable for Lead acid batteries -Open or gel-, in most applications.

External control feature.

The modular connector has a 12V output to control external functions. (start prohibit) 12V / max 0,15A. This output will be activated whenever mains is connected. Red and black lead is used (note polarity, red minus and black plus)



Electrical specifications

ABSOLUTE MAXIMUM RATINGS

Maximum ratings establish the maximum electrical rating to which the unit may be subjected without damage

Parameter	Value	Units	Notes
Output Current / Voltage	33	A	003398X
	16	V	003398X
	20	A	003398X
	30	V	003398X
Stand off voltage	20	V	Nom 12V
Stand off voltage	40	V	Nom 24V
Heat Sink Temperature	65	°C	Note 1
Operating Temperature Range	-30°C - +55°C		

Storage Temperature Range	-55°C- 85°C	
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Fuse 003398X	2x20A
Fuse 003398X	2x20A

1. This is maximum voltage applied between INPUT and GND that the unit will standoff without causing damage to the unit.

Electrical Characteristics

Unless otherwise stated, conditions apply to full temperature range and full input voltage range.

Characteristic	MIN	TYP	MAX	Unit	Notes:
Input Voltage	170	230	270	VAC	1
Input Over Voltage			285	VAC	
Quiescent Current off			<5	mA	100W
Quiescent Current on			150	mA	
Output voltage 12 nom	14,3/13,5	14,4/13,7	14,5/13,9	V	
Output voltage 24 nom	28,5/26,8	28,8/27,5	29,0/27,9	V	
Efficiency		91%			
Voltage ripple 400W	70	100	150	mV	

1. Reduced output power < 195VAC
- 2.

Environmental Specifications

Parameter	Level	Conditions / Notes
Humidity	0 – 100 %RH	
Splash	No, IP20	
Pressure Wash	No, IP20	
Mechanical Vibration	N/a	
Handling Shock	Will Show Damage	

Mechanical specifications

The unit utilizes two 6mm² Tin plated copper cable making power connections.
Length 1,5M.
The AC connection is with standard PVC cord 2x0,75 1,5M.

Finish: Grey RAL 7012, plastic housing

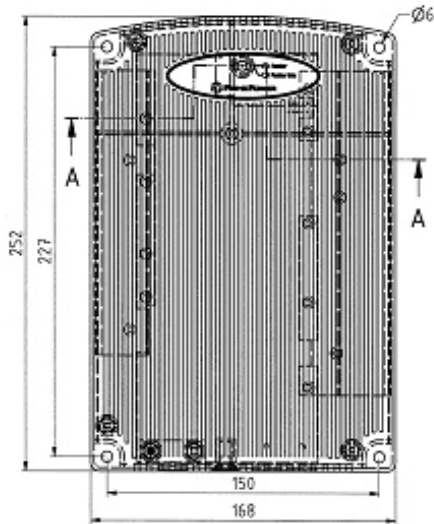
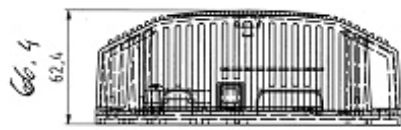
Mounting Slots: 4X, Accepts M4-M6 (6mm diam) Hardware (not included)

Weight: 1,7Kg

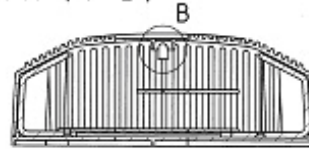
Unit Dimensions: 252 x 168 x 66 i mm

Connection and installation:

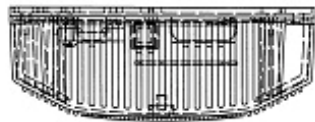
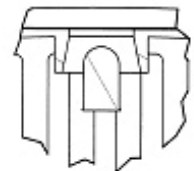
Mount the charger with LED's facing up and cable downwards. This will maintain an efficient cooling and a maximum output current during the whole charging cycle.
Do not extend charging cables. That may affect the charging result. Batteries can generate explosive gases - avoid open flames or sparks
It is not allowed to modify the main cable.
No reliability will be excepted for damages occurred by use without observation.



A-A (1:2)



B (2:1)



Approvals

In accordance with the following EN-norms: EN 60 335-1
EN60 335-2-29, EN 55 014, 55104, EN 60 555-2, EN 60 555-3.

CE