Product Specification

primepower
Idavägen 11
352 46 Växjö
Tel +46 470 72 74 95
Fax +46 470 72 74 99
www.primepower.se

LEAB chAmp 12V / 30A



Art 003398X

2007-01-15	Utg 1	P101-014				
MH	Champ family				003398X	

General description

This Primepower 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

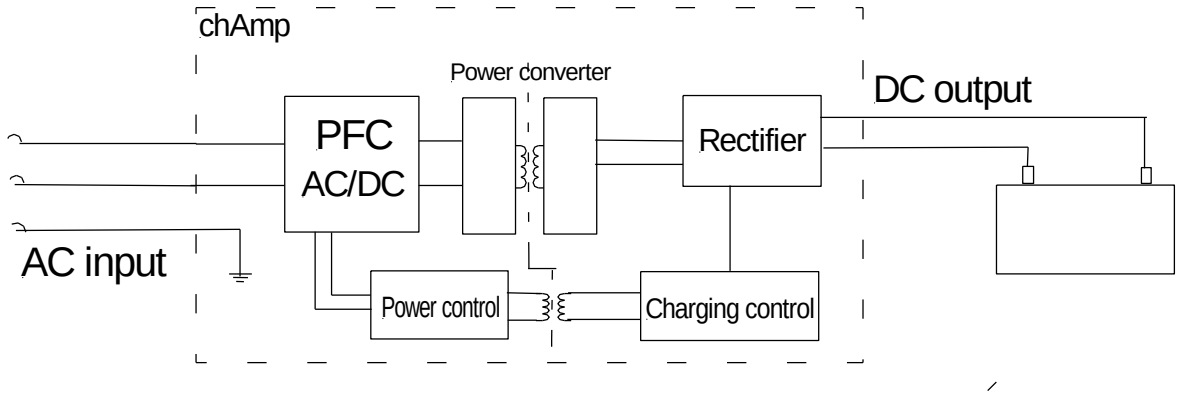
Primepower part number	Specification
003398X	12V / 30A 400W

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

Theory of operation

The Primepower LEAB 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.

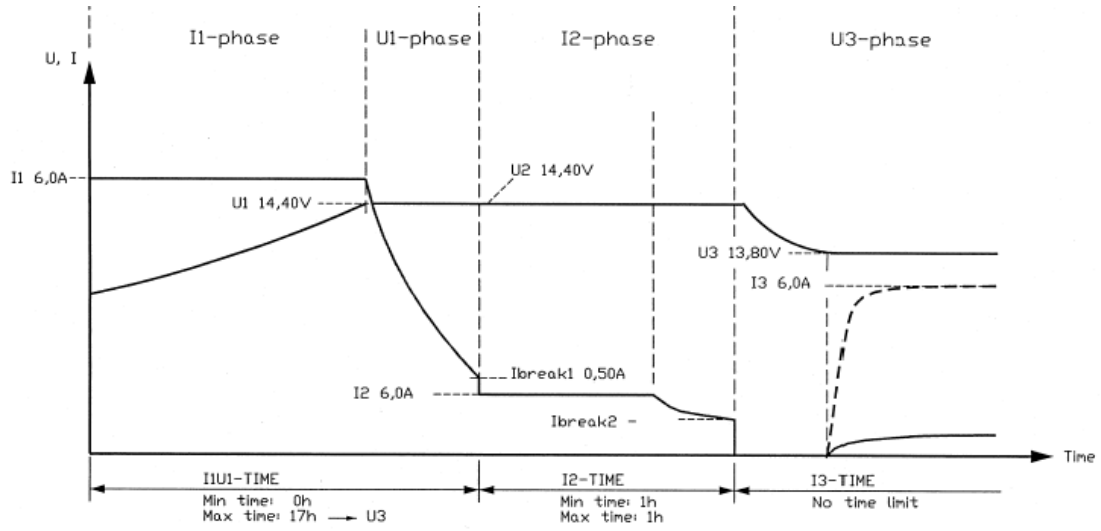
Block Diagram



Charging algoritm

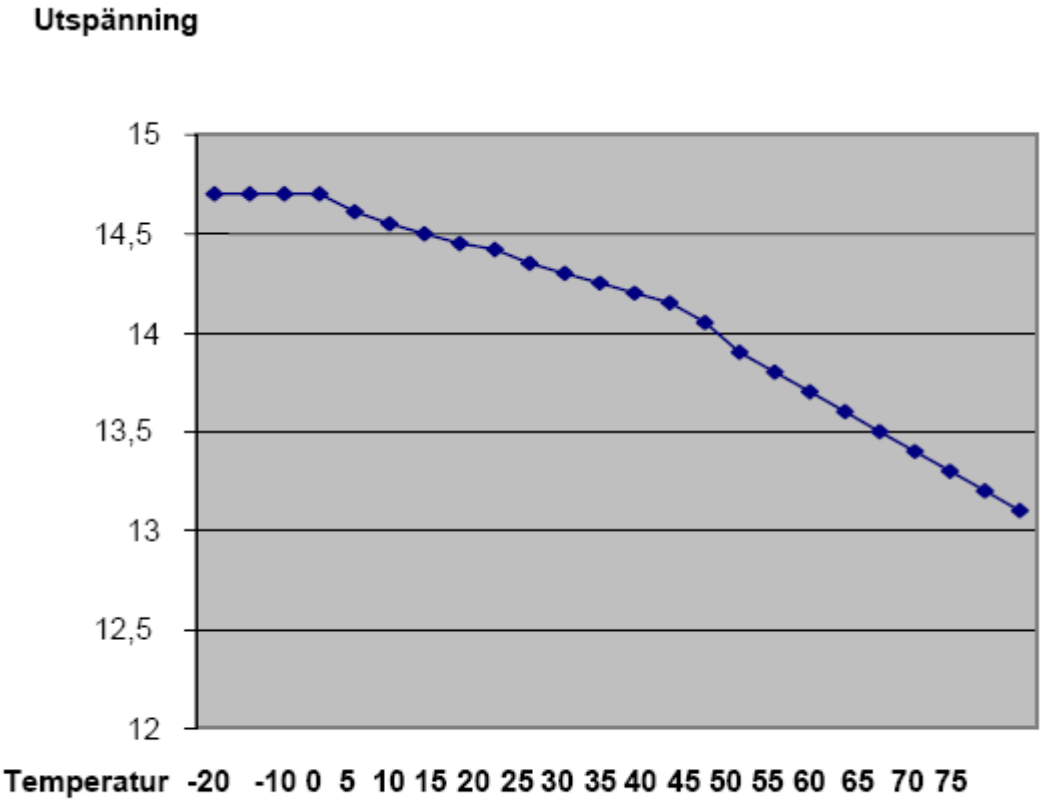


The charging in standard program is indicated as follows:
Step 1, the bulk phase is indicated with the red LED.
This indication is kept through step 2.
When the current is below 10% of the maximum output the charger goes into step 3 and the LED iturns yellow. After approx 2 hours the yellow LED switches 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 the charger switches to bulkcharge and the LED will turn red.



Tempsense

Diagram shows the effect on output voltage if tempsense is connected



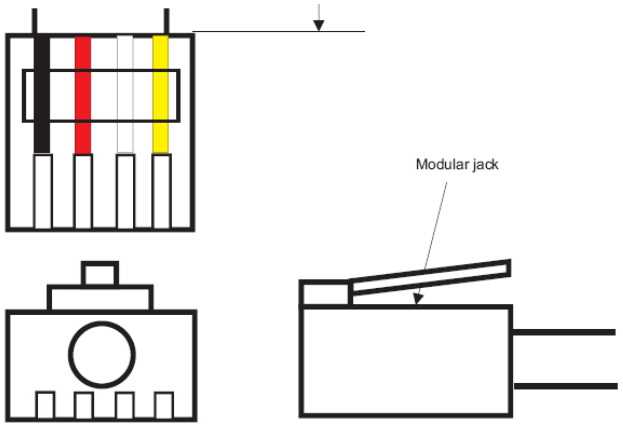
3mv / cell / degree

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. Normal vehicle relay is about 0,125A.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
Stand off voltage	20	V	Nom 12V
Heat Sink Temperature	65	°C	
Operating Temperature Range	-30°C - +55°C		
Storage Temperature Range	-55°C- 85°C		

Fuse 003398X	2x20A

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 std	14,3/13,5	14,4/13,7	14,5/13,8	V	
0033381	14,6/13.6	14,7/13,7	14,8/13,8	V	
Efficiency		91%			
Voltage rippel 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

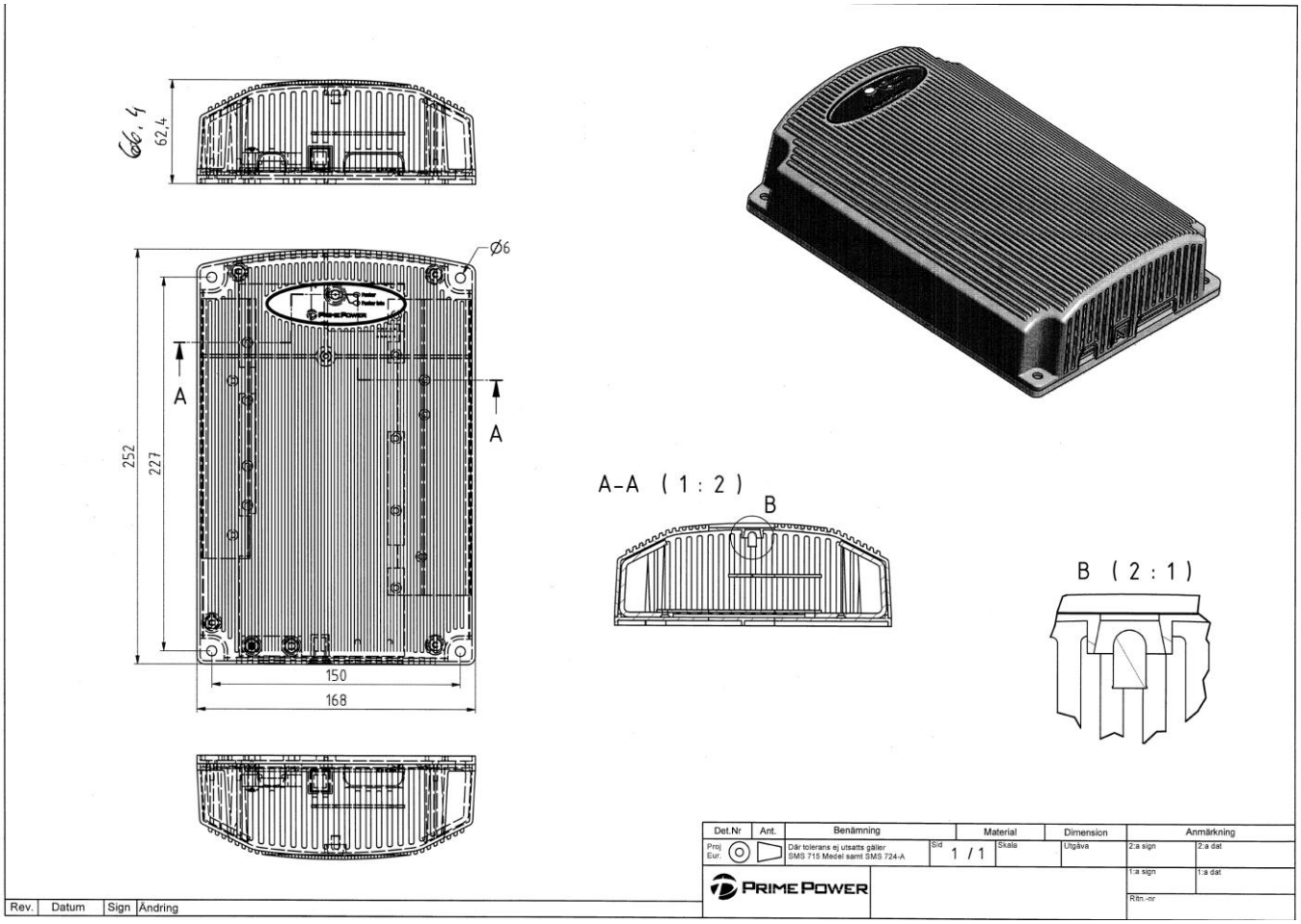
The unit utilizes two 6mm2 Tin plated cupper cable making power connections.
Length 1,5M.
The AC connection is with standard PVC cord 2x0,75 1,5M.

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.



Approvments

Low Voltage Directive, 2006/95/EC, the EMC Directive, 2004/108/EC, including amendments by the CE marking Directive, 93/68/EEC

The following harmonised European standards or technical specifications have been applied :

Standards Test reports issued by Regarding

EN 60 335-1 Intertek SEMKO electrical safety

EN 60 335-2-29 ,SS 4330770 Intertek SEMKO electrical safety

EN 61204-3:2000 Intertek SEMKO EMC emission

EN 61204-3:2000 Intertek SEMKO EMC immunity

EN 50366:2003+A1 Intertek SEMKO EMF, magnetics

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