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LEAB chAmp family 300W



Art 00438XX 00338XX

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
- Waterproof and shock resistant, IP67
- Powder coated Metal enclosure
- Small and easy to install

Part number / order information

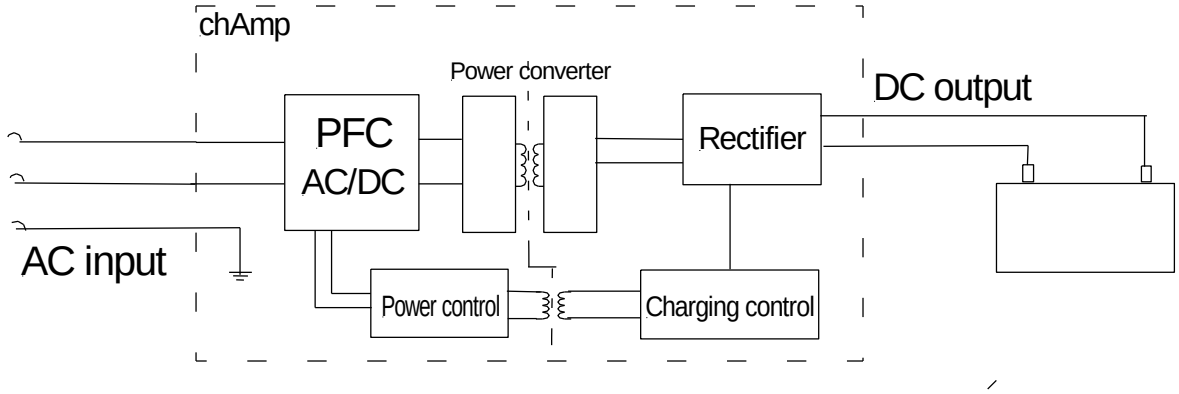
Primepower part number	Specification
0043810	12V / 17A 250W
0043850	24V / 12A 300W
0033870	48V / 5A 300W
0033875	72V / 3A 300W
0033883 Powersupply	24V 12Amp

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 electronics and rectified to a correct charging voltage on output.

Block Diagram

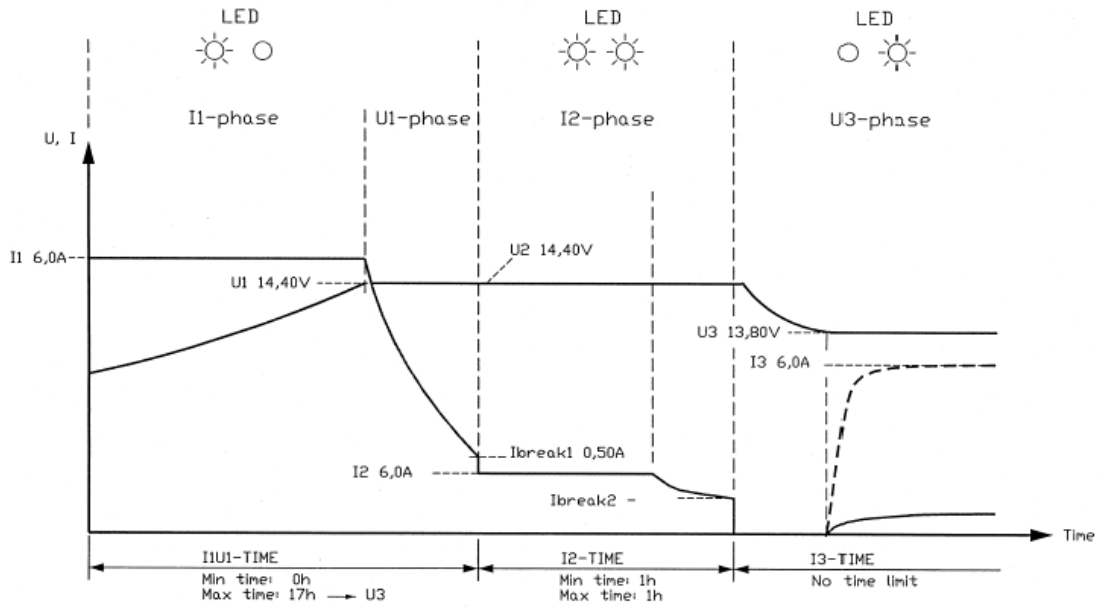


Charging algorithm



The charging in standard settings is indicated as follows:
Step 1, the bulk phase is indicated with the yellow 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 green LED is lit up. After approx 2 hours the yellow LED is turned off and green LED is turned on as long as the charger is connected to mains.

If the parallel load of some reason reduce the voltage level below the nominal value 12,7V(12V) 25,4V (24V) during maintenance charge, the charger goes back into step 1 and indicates that as stated above. If current does not reach under 10% of the current I1 the charger will enter step 3 (maintenance charge) on time conditions. This will be indicated with the second green LED, on the front panel.
The maximum time in step 2 is set to16h.



Descriptions of features

The complete electronics is mounted in the metal enclosure and totally sealed in polyurethane. Water, oil or other substances will thereby be effectively kept out. The champ can be mounted in very harsh environment such as engine-compartment due to the encapsulation.
Before potting 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.

Optional feature
The charger can be equipped with a tempsensecable, when produced.
The output will be compensated with 3mV/cell/degree @25degrees.

***If the charger is programmed as a power supply the green and yellow LED will be constantly illuminated.**

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	18	A	0043810
	16	V	0043810
	12	A	0043850
	31	V	0043850
Stand off voltage	20	V	Nom 12V
Stand off voltage	40	V	Nom 24V
Heat Sink Temperature	65	°C	
Operating Temperature Range	-25°C - +40°C		
Storage Temperature Range	-55°C- 85°C		

Fuse 0043810	20A
Fuse 0043850	20A

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	
Input voltage frequency		40-60Hz			
Quiescent Current off			<1	mA	
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	
Output voltage 48 nom	58/52	60/54	61/55	V	
Output voltage 72 nom	88/80	90/81	92/85	V	
Output voltage 12V Powersupply	13,3	13,5	13,7	V	
Output voltage 24V Powersupply	26,7	27	27,5	V	
Efficiency		91%			
Voltage rippel	10	30	50	mV	

1. Reduced output power < 195VAC

Environmental Specifications

Parameter	Level	Conditions / Notes
Humidity	0 – 100 %RH	
Splash	Yes, IP67	
Pressure Wash	Yes, IP67	
Mechanical Vibration	40G	according to standard IEC 60068-2-6
Handling Shock	Will Show Damage	

Mechanical specifications

The unit utilizes two 2,5mm2 Tin plated cupper cable making power connections. Cable mounted fuse on plus lead.
Length 1,5M. The AC connection is with standard PVC cord 3x0,75 1,5M.

Finish: Grey RAL 7035, powder coated aluminium

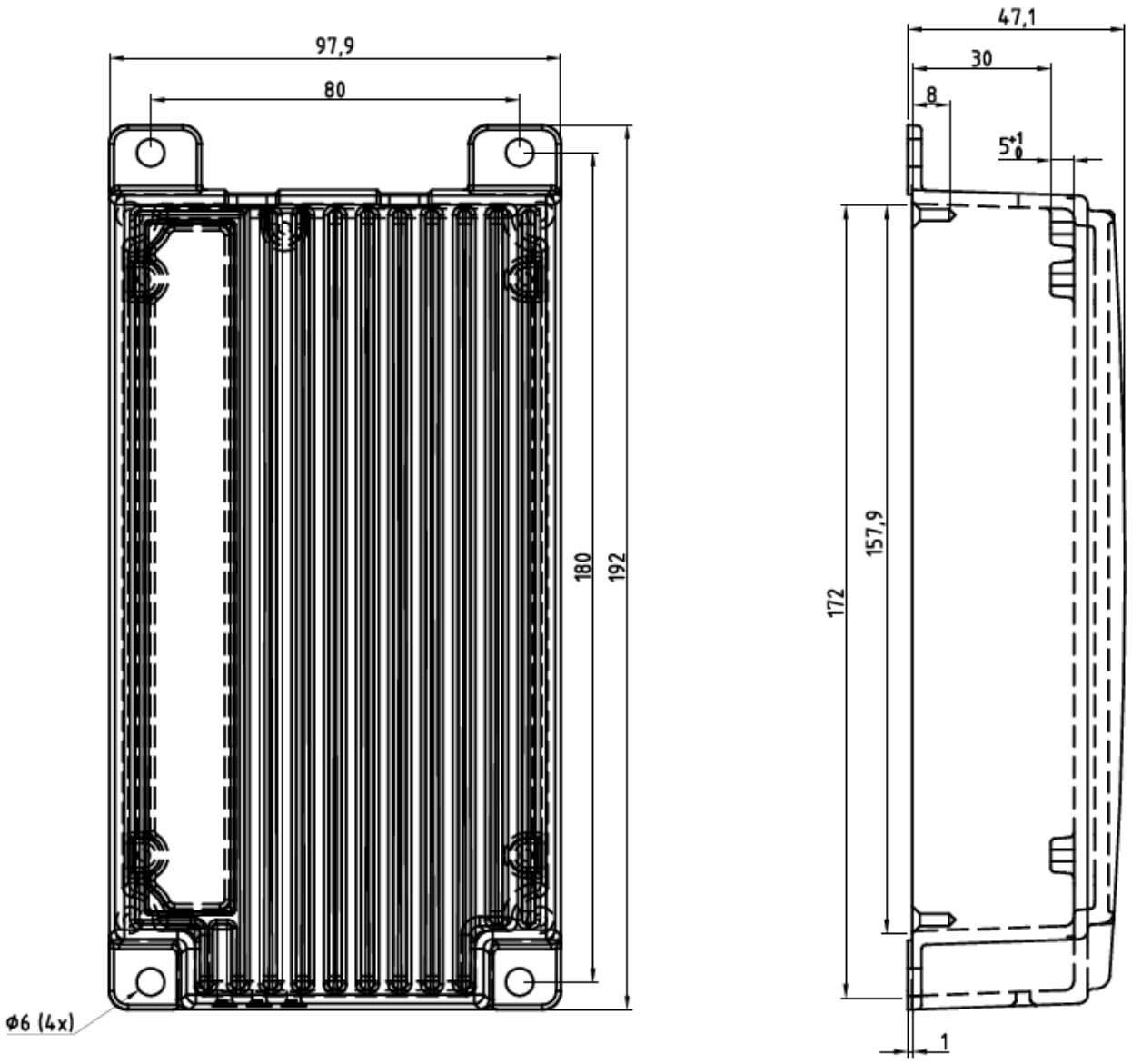
Potting material: Polyurethane

Mounting Slots: 4X, Accepts M4-M6 (6mm diam) Hardware (not included)
Weight: 1,6Kg
Unit Dimensions: 195 x 98 x 47

Connection and installation:

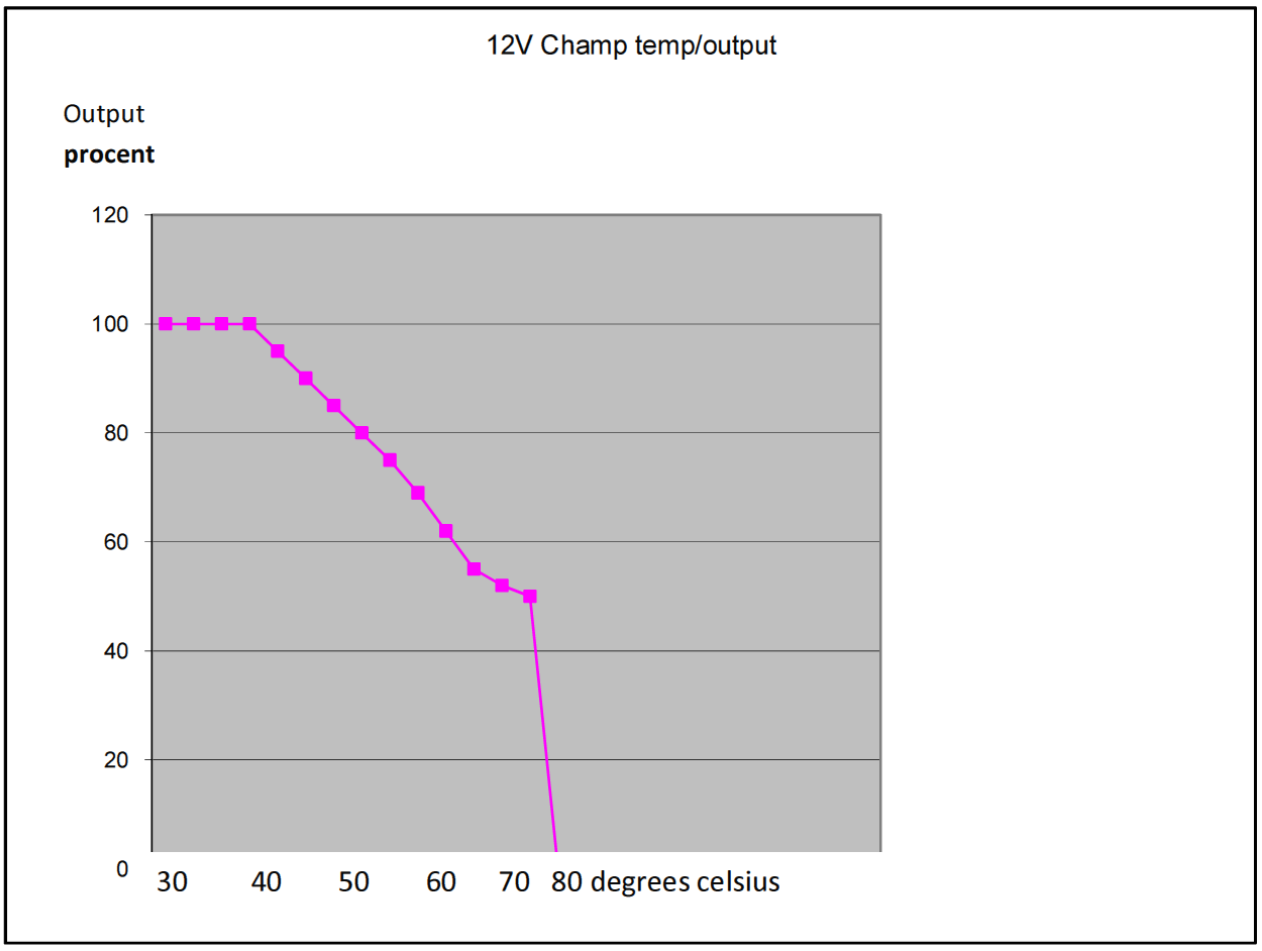
Mount the charger with LED:s facing up and cable downwards. This will maintain an efficient cooling and a maximum output current during the whole charging cycle.
Do not extend charging cables. That may affect the charging result.
Batteries can generate explosive gases - avoid open flames or sparks
It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

0043810 / 0043850



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

Ambient temperature deration curve



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All specification can be changed without prior notice