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# LEAB chAmp family 100W



**Art 00437XX**

## 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 micro controller 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

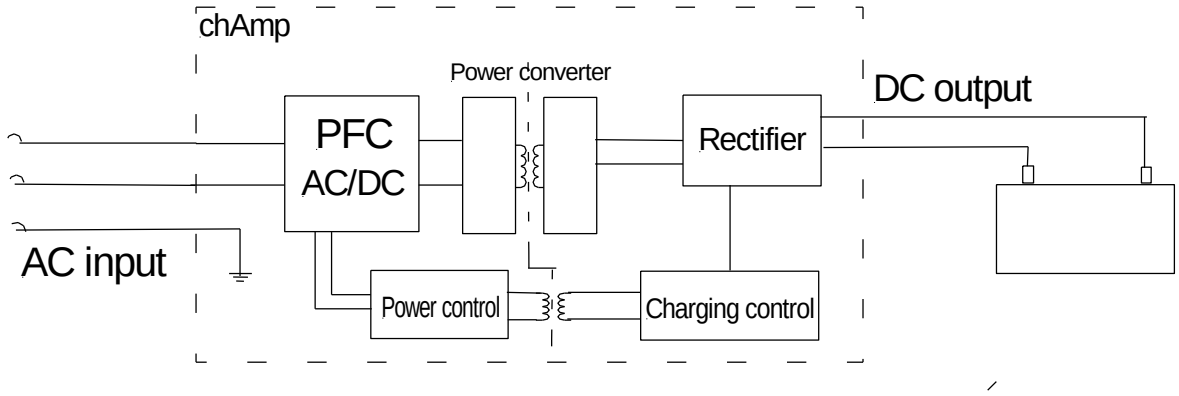
| Primepower part number | Specification |
|---|---|
| 0043710 | 12V / 7A 100W |
| 0043750 | 24V / 3A 100W |

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

## Theory of operation

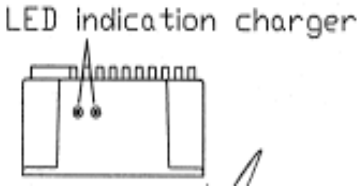
The Primepower LEAB chAmp family is one of the most compact battery chargers available.
The input AC voltage is feed through a passive PFC stage and converted into a DC Voltage of approx 400V. A high frequency switch into a low dc voltage does the power conversion. This voltage is controlled by the internal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

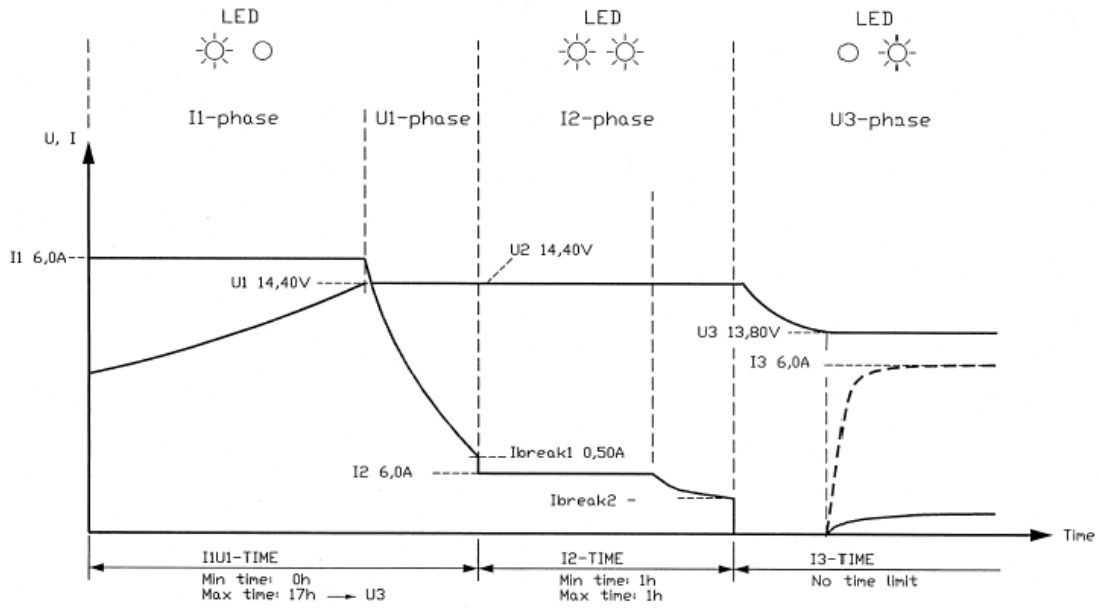
Block Diagram




## Charging algoritm

The charging in standard program is indicated as follows:
Step 1, the bulk phase is indicated with the 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.






## 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.

## 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 | 7 | A | 0043710 |
| | 16 | V | 0043710 |
| | 4 | A | 0043750 |
| | 33 | V | 0043750 |
| | | | |
| | | | |
| | | | |
| | | | |
| 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 0043710 | 10A |
| Fuse 0043750 | 5A |

## 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 0033710/0033750 | | 88% | | | |
| Voltage rippel 100W | 70 | 100 | 150 | mV | |

1. Reduced output power < 195VAC
2.

## 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 1,5mm2 (0043710, 0043750) 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

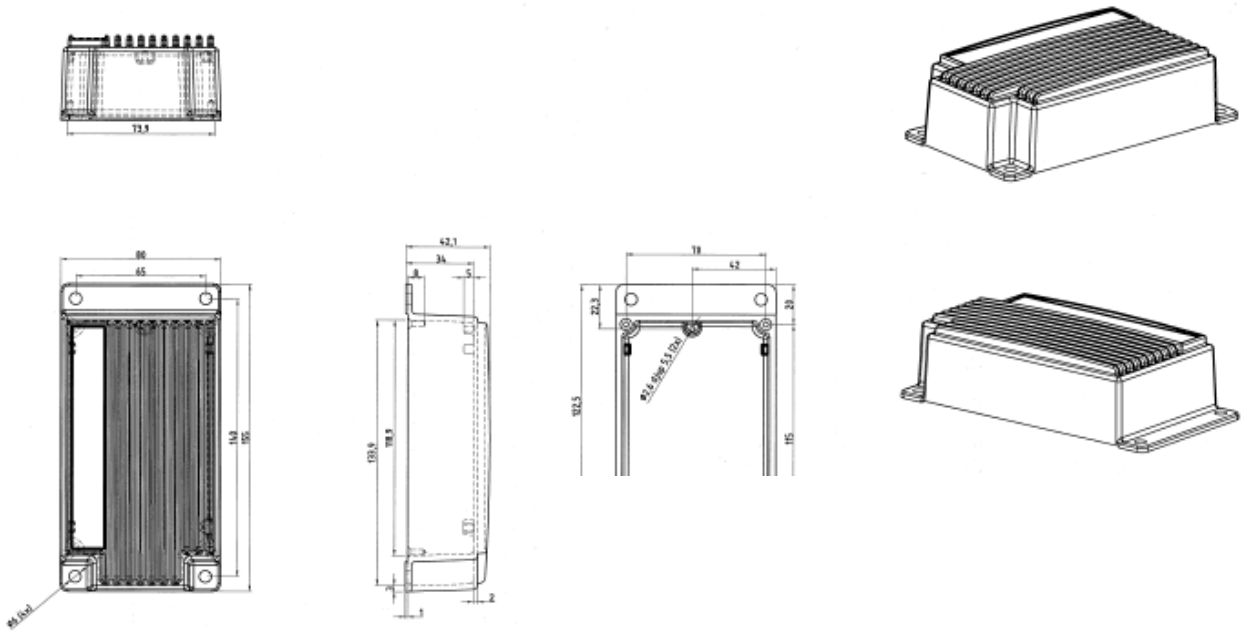
**Potting material:** Polyurethane

**Mounting Slots:** 4X, Accepts M4-M6 (6mm diam) Hardware (not included)
**Weight:** 0043710 / 0043750 0,9Kg
**Unit Dimensions:** 0043710 / 0043750:155 x 80 x 43

## 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.

0043710 / 0043750



**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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CE

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