

Mac Plus 12/24-30



Product code: 81205300

Boost the charging voltage of your service battery!

Charging the service batteries on board of a vehicle or vessel can be challenging. Recharging tends to take a long time and batteries may not receive a full charge. This is a common problem found in boats, service vans, campers and trucks. Smart alternators and start/stop systems make the problem even worse.

Robust DC-DC charger guarantees optimal condition of your service battery

Traditionally, a service battery is linked to the starter battery by means of a charge relay. The starter battery is located close to the alternator and receives most of the charge current. However, the service battery is usually further away. Long cables cause voltage drop, leading to slow charging, resulting in failing appliances and premature failure of the battery.

Modern, fuel efficient engines are equipped with smart alternators, following regulations such as Euro 5 and Euro 6. Instead of a constant output, smart alternators provide a variable voltage; after a brief charging period, voltage is reduced and the charging stops. Furthermore, the energy produced by regenerative braking leads to voltage peaks. Service batteries coupled in the traditional way will receive hardly any charge and may be damaged by these peak voltages.

To solve these issues, Mastervolt introduces the Mac Plus DC-DC chargers, available in 12 V or 24 V. The Mac Plus monitors the service battery and compensates the voltage loss. The proven 3-step charge method ensures a quick and safe charge. Moreover, by stabilizing the charge voltage, Mac Plus protects your service battery and sensitive equipment.

Features

- Fast and safe charging during short trips.
- Fanless design for silent operation.
- Suitable for flooded, Gel, AGM and Li-Ion batteries (incl. LiFePO4).
- Charges even fully depleted batteries.
- Engine run detection protects starter battery.
- Adjustable current limits to meet Euro 5/6 requirements.
- Voltage stabilisation protects sensitive equipment, lights and loads.
- Parallel operation to obtain charging capacities well over 100 Amps.
- MasterBus for intelligent system monitoring and automation.
- Temperature compensation and voltage sense for an optimal charging result.
- E-mark certification for mobile applications.
- Power supply mode.
- Heavy duty connections for easy installation and quick set up via DIP switches.

The non-isolated Mac Plus models have an electrical connection between the input and output.

Features:

- Low costs.
- Efficient: low heat generation.
- Compact.
- Suited to applications with negative earthing.

Applications

Boost charge voltage when service battery is located further from charging source or in systems with a smart alternator. When a stable power supply or different system voltage is needed.

Euro 5/6 solution

Charging service batteries in Euro 5/6 applications?

The Mac Plus provides constant power to the service battery, even when the alternator is inactive.

Parallel operation

The parallel configuration of several units will provide you over 100 amperes. Advanced high-frequency technology with modern microprocessors ensures minimum power loss when switching from 24 to 12 V and vice versa.

Solid Connections

Galvanized brass connection block with screw terminal or chrome-plated fast-on for DC in/out for the Mac/Magic models. The robust M8 connections of the Mac Plus prevent any loosening due to vibrations.

Specifications

Specifications battery charger

Battery temperature sensor
Battery voltage sense

yes, included
yes

General specifications

Status indicator
Output voltage
Nominal output voltage
Output voltage stabilisation
Output voltage ripple (peak peak)
Max. output power
Nominal output power
Max. output current
Output charge current (3-step mode)
Nominal input voltage
Input voltage range
Max. input current
Galvanic isolation
Voltage limited
Efficiency
Parallel configuration
Alarm contact
MasterBus powering
Engine run signal input
DIP switches
Dimensions, hwxwd

yes, 3-color LED
20-30 V
24 V
2 % at extremes of tem-ps, load and input
max. 1 %
725 W
675 W
30 A
30 A
12 V
10-16 V
50 A
no
yes
> 95 % (at nom. input voltage, full load); peak 97 %
yes
yes, through MasterBus
no
yes (active high/active low)
yes, for basic setup
255 x 165 x 66 mm
10.0 x 6.5 x 2.6 inch
2 kg
4.4 lb
CE, E-Mark, SAE J1171 & ISO 8846 Ignition Protected

Weight

Compliance

Technical specifications

No-load consumption
Charge characteristic
Battery types
3-Step charge option
DC consumption
Connections

< 2 mA
3-step+
flooded, Gel, AGM, spiral, Lithium Ion, traction, user defined
yes (DIP switch settings)
< 5 mA
3 x M8 terminal for cable diameters of 10-50 mm², (positive input, positive output, joint negative connection) 6-pole screw connection for cable diameters of 0.75-1.5 mm² (remote on/off, temperature sensor, voltage measurement)
-25 °C to 60 °C; derating > 40 °C
-13 to 140 °F
natural cooling
IP23
overload, over temperature, DC short circuit, reversed polarity (fuse)
yes

Temperature range (ambient temp.)

Cooling
Protection degree
Protections
MasterBus compatible