

Mastervolt DC-DC Converters: For 12, 24 and 48 volt

A DC-DC converter can provide other voltages than those applied in your basic system. By using a DC-DC converter, other voltages can be reached. They also ensure that all your equipment has a stable power supply with the right voltage.

Mac Plus & Magic Series

- Professional use.
- Converter and 3-step battery charger.
- Parallel switchable.
- Adjustable and programmable output voltage.
- Voltage stabilisation for a longer lifespan of halogen lights, etc.
- Dimmer function for Mac & Magic models.
- Mac Plus: optimal charging in Euro 5/6 applications.

The **Magic** models can regulate the voltage both up and down to ensure an optimal voltage stabilisation, even when the battery voltage fluctuates due to heavy loads. The galvanic isolation between input and output prevents disruptions to, for instance, communication equipment.

The **Mac Plus** is ideal for charging service batteries in vehicles with a smart Euro 5/6 alternator. The Mac Plus charges the batteries quickly, even when the alternator is inactive and the battery voltage very low. The automatic start/stop function ensures that empty starter batteries become a thing of the past. The Mac Plus comes with integrated MasterBus (CAN) communication and E-mark certification. It seamlessly charges Lithium Ion, Gel and AGM batteries via the tried and tested Mastervolt 3-stage charging method.

DC Master Series

- Recreational and semi-professional use.
- Easy to install using included mounting bracket.
- Excellent price/performance ratio.
- Available in isolated and non-isolated version.

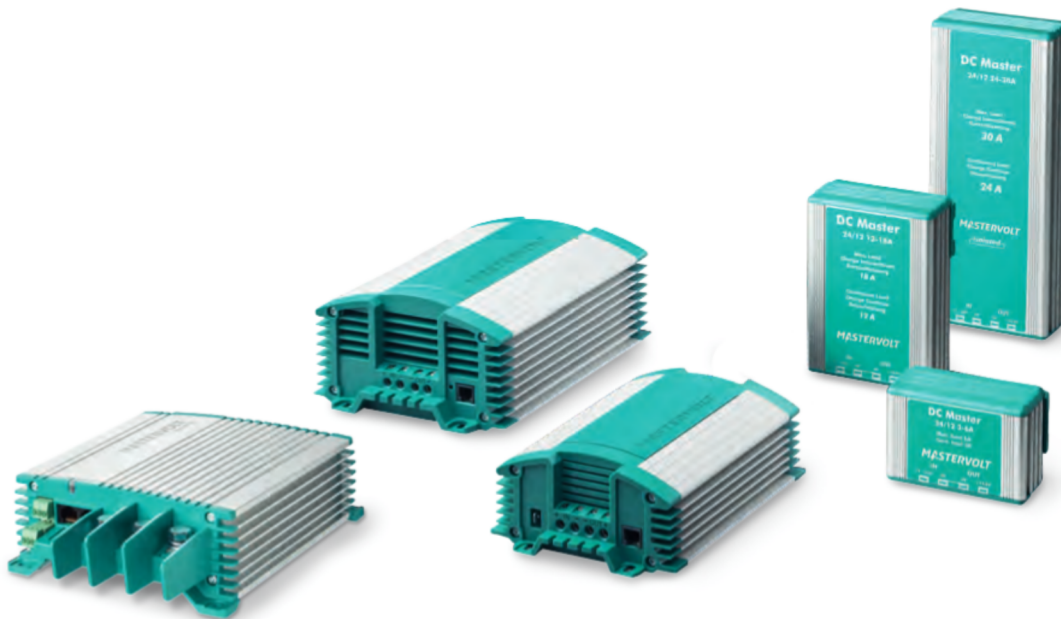


QUOTE

"During our fantastic journey to the South Pole, it became clear that the Mastervolt system did the job extremely well. Not once did the system let us down or enter a critical situation. If any part of the Mastervolt system had failed, it would have meant the end of our expedition and could have put us in a dangerous situation, as charging the system using mains power is simply not an option in Antarctica."

EDWIN & LIESBETH TER VELDE
CLEAN2ANTARCTICA.COM, THE NETHERLANDS





Programmable via laptop or PC



Remote control the Mac/Magic via your laptop or PC, or configure your personal preferences.

The device has a communication port and easy installation with a PC-Link and MasterAdjust software.

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.



Energy-saving dimmer function



Many standard light dimmers convert part of the energy to heat and also lose unnecessary energy. The Mastervolt Mac/Magic converters regulate the power supply efficiently and without excessive heat build-up, for optimal safety (multiple converters can be used for multiple lamps).

3-Step battery charger



Connected to the 12 or 24 V service battery, the Mac/Magic series can also be used as an advanced 3-step battery charger for Gel, AGM, flooded or Lithium Ion batteries.



Parallel Operation



Lots of consumers on board? 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.

Mac Plus series: 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.

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.



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.

Battery's Best Friend



The Mac Plus is your battery's best friend. It monitors your service battery and makes sure it's always fully charged, maximising the lifetime of your battery.



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.






Specifications

Mac & Mac Plus

DC-DC converters

	24/12-20	12/12-50	12/24-30	24/12-50	24/24-30
Product code	81200100	81205100	81205300	81205200	81205400
GENERAL SPECIFICATIONS					
Battery voltage sense	n.a.	yes	yes	yes	yes
Status indicator	n.a.	yes, 3-color LED	yes, 3-color LED	yes, 3-color LED	yes, 3-color LED
Output voltage	10-15 V DC	10-15 V DC	20-30 V DC	10-15 V DC	20-30 V DC
Nominal output voltage*	13.6 V DC	12 V DC	24 V DC	12 V DC	24 V DC
Output voltage dimmer*	4-13 V DC	n.a.	n.a.	n.a.	n.a.
Output voltage stabilisation	2 % at extremes of temps, load and input				
Output voltage ripple	max. 1 % peak peak	max. 1 % peak peak	max. 1 % peak peak	max. 1 % peak peak	max. 1 % peak peak
Output power (max./nominal)	300 / 270 W	725 / 675 W	725 / 675 W	750 / 710 W	850 / 810 W
Max. output current	20 A	50 A	30 A	50 A	30 A
Output charge current - 3-step mode	16 A	50 A	30 A	50 A	30 A
Nominal input voltage	24 V	12 V	12 V	24 V	24 V
Input voltage range	20-32 V DC	10-16 V DC	10-16 V DC	19-30 V DC	19-30 V DC
Max. input current	n.a.	50 A	50 A	50 A	50 A
Galvanic isolation	no	no	no	no	no
Voltage limited	yes	yes	yes	yes	yes
Efficiency	>90 % (nom. input voltage, full load); 92 % peak	> 95 % (at nom. input voltage, full load); 97 % peak			
Parallel configuration	yes	yes	yes	yes	yes
Alarm contact	no	yes, through MasterBus	yes, through MasterBus	yes, through MasterBus	yes, through MasterBus
MasterBus powering	no	no	no	no	no
Engine run signal input	n.a.	yes (active high/active low)			
DIP switches	n.a.	yes, for basic setup	yes, for basic setup	yes, for basic setup	yes, for basic setup
Dimensions, hxxwxd	190 x 130 x 61 mm 7.5 x 5.1 x 2.4 inch	255 x 165 x 66 mm 10 x 6.5 x 2.6 inch	255 x 165 x 66 mm 10 x 6.5 x 2.6 inch	255 x 165 x 66 mm 10 x 6.5 x 2.6 inch	255 x 165 x 66 mm 10 x 6.5 x 2.6 inch
Weight	1 kg / 2.2 lb	2 kg / 4.4 lb	2 kg / 4.4 lb	2 kg / 4.4 lb	2 kg / 4.4 lb
Approvals	CE	CE, E-Mark, SAE J1171 & ISO 8846 Ignition Protected			
TECHNICAL SPECIFICATIONS					
No-load consumption	n.a.	< 2 mA	< 2 mA	< 2 mA	< 2 mA
Battery types	flooded, Gel, AGM, spiral, Lithium Ion, traction, user defined				
3-Step charge option (dip switch settings)	yes	yes	yes	yes	yes
DC consumption	< 30 mA	< 5 mA	< 5 mA	< 5 mA	< 5 mA
Connections input/output	screw terminals, max. wire size 16 mm² / AWG5	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)			
Temperature range (ambient temp.)	-25 °C to 60 °C; > 40 °C derating power / -13 °F to 140 °F; > 104 °F derating power				
Cooling	natural cooling	natural cooling	natural cooling	natural cooling	natural cooling
Protection degree	IP21	IP23	IP23	IP23	IP23
Protections	overload, over-temperature	overload, over-temperature, DC short circuit, reversed polarity (fuse)			
MasterBus compatible	yes, in combination with MasterBus Serial Interface	yes	yes	yes	yes





* Adjustable with MasterAdjust software.

ACCESSORIES		PC-Link 21730300	option	n.a.	n.a.	n.a.	n.a.
	Interface between Mac converter and PC, in combination with the MasterAdjust software (free to download). The PC-Link can be directly connected to a computer serial port.						
		EasyView 5 77010310	option	option	option	option	option
	In combination with a MasterBus Serial Interface. Waterproof system monitor with 'daylight readable' colour display and intuitive multi-language touchscreen to show the key system information at a glance. There is also a logbook feature for warnings and alarms, along with a buzzer and alarm notifications. The home button gives access to favorite pages.						
		MasterBus Serial Interface 77030450	option	n.a.	n.a.	n.a.	option
	Integrates the Mac & Magic converters in a MasterBus network.						
	Temperature sensor 6m 41500500	delivered as standard	delivered as standard	delivered as standard	delivered as standard	delivered as standard	delivered as standard
	Temperature sensor 15m 41500800	option	option	option	option	option	option






Specifications Magic converters

Specifications

Magic converters

				
	Magic 24/12-20	Magic 24/24-20	Magic 12/12-20	Magic 12/24-10
Product code	81300100	81300200	81300400	81300300
GENERAL SPECIFICATIONS				
Output voltage	10-15 V DC	20-28.5 V DC	10-15 V DC	20-28.5 V DC
Nominal output voltage*	13.6 V DC	27.2 V DC	13.6 V DC	27.2 V DC
Output voltage dimmer*	4-13 V DC	8-26 V DC	4-13 V DC	8-26 V DC
Output voltage stabilisation	2 % at extremes of temps, load and input			
Output voltage ripple	max. 1 % peak peak	max. 1 % peak peak	max. 1 % peak peak	max. 1 % peak peak
Output power (max./nominal)	300 / 300 W	580 / 580 W	300 / 300 W	300 / 300 W
Max. output current	20 A	20 A	20 A	10 A
Output charge current - 3-step mode	16 A	16 A	16 A	8 A
Nominal input voltage	24 V	24 V	12 V	12 V
Input voltage range	19-32 V DC	19-32 V DC	11-16 V DC	11-16 V DC
Input range, (3-step charge mode)	24-32 V DC	24-32 V DC	12-16 V DC	12-16 V DC
Lower input set point	20 V DC*	20 V DC*	10 V DC*	10 V DC*
Delay lower input set point	30 sec.*	30 sec.*	30 sec.*	30 sec.*
Galvanic isolation	yes	yes	yes	yes
Voltage limited	yes	yes	yes	yes
Efficiency	>90 % (nom. input voltage, full load); 92 % peak			
Parallel configuration	yes	yes	yes	yes
Dimmer function	yes, by external momentary switch via fast-on connection, to be activated by DIP-switch setting			
Alarm contact	no	yes, through MasterBus	yes, through MasterBus	yes, through MasterBus
Dimensions, hxxwxd	190 x 130 x 61 mm 7.5 x 5.1 x 2.4 inch	255 x 165 x 66 mm 10 x 6.5 x 2.6 inch	255 x 165 x 66 mm 10 x 6.5 x 2.6 inch	255 x 165 x 66 mm 10 x 6.5 x 2.6 inch
Weight	1 kg / 2.2 lb	2 kg / 4.4 lb	2 kg / 4.4 lb	2 kg / 4.4 lb
Approvals	CE	CE, E-Mark, SAE J1171 & ISO 8846 Ignition Protected		
TECHNICAL SPECIFICATIONS				
No-load consumption	n.a.	< 2 mA	< 2 mA	< 2 mA
Battery types	flooded, Gel, AGM, spiral, Lithium Ion, traction, user defined			
3-Step charge option (dip switch settings)	yes	yes	yes	yes
DC consumption	< 115 mA	< 115 mA	< 115 mA	< 115 mA
Connections input/output	screw terminals, maximum wire size 16 mm² / AWG5			
Temperature range (ambient temp.)	-25 °C to 60 °C; > 40 °C derating power / -13 °F to 140 °F; > 104 °F derating power			
Cooling	maintenance-free vario fans	maintenance-free vario fans	maintenance-free vario fans	maintenance-free vario fans
Protection degree	IP21	IP21	IP21	IP21
Protections	against over load & over temperature			
MasterBus compatible	yes, in combination with a MasterBus Serial Interface			

* Adjustable with MasterAdjust software.

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