

## DC-DC converter Magic (24/12-20)



PN 81300100

- Conversion to the right voltage
- Stabilisation of the voltage
- Longer life span of halogen lights
- Battery charger function
- Dimmer function for atmospheric lighting
- Galvanic isolation of the input and output
- Completely interference-proof
- Programmable via a desktop or laptop PC
- Efficient cooling (microprocessor controlled fan)

### Description

Different electrical systems use different voltages. This Magic DC-DC converter, from a new generation of microprocessor-controlled converters, will turn 24V DC into 12V DC, so you can enjoy both. But it brings you even more benefits, like dimming and battery charging.

The voltage required for direct current (DC) can vary considerably onboard a yacht. A bow thruster or a winch installation often works at 24V. But navigation and communication equipment mostly requires 12V. By using this small and lightweight DC-DC converter another voltage than applied in your basic system can be reached. It also ensures that your onboard equipment has a stable power supply with the right voltage. If you have many power-consuming devices onboard, the parallel use of several units can allow capacities of 40, 60 or more Amps. The charging of batteries takes place via the Mastervolt three-stage charge function.

The MAGIC model can be used to operate in step up mode and step down mode. The inlets and outlets feature complete galvanic isolation which makes them completely interference-proof. The converter uses the switch-mode technology, which results in a lightweight, safe, reliable and efficient unit. Built in a rugged aluminium extrusion body, the converter is completely shock proof. The unit generates little heat, which makes it easy to find a convenient location for installation. The corrosion-proof casing takes care of cooling together with a temperature-controlled fan.

## Specifications

### INPUT SPECIFICATIONS

Nominal input voltage	24V
Input range (full output specs)	19-32V DC
Input range (3-stage charge mode)	24-32V DC
Input range (no defects)	0-35V DC
Lower input (set point)	20V DC (adjustable with MasterAdjust software)
Delay lower input set point	30 sec. (adjustable with MasterAdjust software)

### OUTPUT SPECIFICATIONS

Nominal voltage	13.6V DC (adjustable with MasterAdjust software)
Voltage adjustable	12-15V DC (adjustable with MasterAdjust software)
Output voltage dimmer	4-13V DC (adjustable with MasterAdjust software)
Stabilised	2% at extremes of temperatures, load and input
Ripple	max. 1% peak peak
Maximum power	300W
Nominal power	270W
Current max. (derating >40°C, 5%/°C)	20A
Charge current - 3-step mode	16A

### GENERAL SPECIFICATIONS

Ambient operating temperature	0°C to 60°C (derating above 40°C, 5% per °C); in practice: 20°C to 60°C
Storage temperature	-25°C to 85°C
Operating humidity	95% max. (non condensing)
Galvanic isolation	yes
Voltage limited	yes

3-step battery charge option                      yes (DIP switch setting)

Efficiency    90% (at nom. input voltage, full load); 92% peak

No load consumption                                      <115mA

### PROTECTIONS

Over current    yes

Over heat    yes

### OPTIONS

Dimmer function    yes (by external momentary switch via push on connection, to be activated by DIP switch setting)

Alarm contact    yes (push on connector)

Communication    quasi RS232, modular RJ12 connector to alter setpoints and to change characteristics (optional interface required)

### MECHANICAL

Connections input/output                                      screw terminals (max. wire size 16 mm<sup>2</sup>/AWG5)

Dimensions (H x W x D)                                      227 x 154 x 81 mm

Weight    1.8 kg

Cabinet    anodised aluminium (Strapton ABS blend)

IP-rating    IP21

### Accessories



MasterBus-Serial Interface



Serial PC Link



Serial PC Link (galvanically isolated)