

# Mass Combi Ultra 24/3500-100 (230 V)



Product code: 38023500

## Powerful, complete and versatile

The Mass Combi Ultra series comprises several models, varying from 3000 W to 3500 W. For higher capacities up to 35 kW the Combi Ultra can be used in parallel or 3-phase configurations. An efficient and integrated solar charge regulator helps make the most of your solar panels.

The Mass Combi Ultra is equipped with the latest technologies. The new inverter technology ensures a uniquely low stand-by use, while an ultra-fast Digital Signal Processor guarantees seamless switching between all available energy sources. Power Assist prevents power dips and failures, even with a weak electricity connection or small generator. Moreover, all Mass Combi Ultra models are equipped with MasterBus.

## Higher yield from solar energy

At Mastervolt we used our knowledge gained in the grid connected solar sector to make a super-efficient built-in MPPT solar charge regulator. Compared to most solar charge regulators on the market, the MPPT offers up to 30 % more yield from solar panels. The solar panels power 'hidden' consumers and keep your batteries in optimal condition.

## Energy saving

The integrated solar charge regulator is preferred over the AC-in, so that the batteries will initially only be charged by green solar energy. A CO2 and cost-effective solution to keep your batteries in perfect condition.

## Quiet operation

The Mass Combi Ultra can provide up to 50 % of the charging current or inverter capacity without fan cooling. This is perfect for night-time operation; if little power is consumed, the fan stops turning and goes silent. When maximum capacity is required, or the ambient temperature is very high, the Active Optima Cooling concept regulates the fan speed in a linear way, ensuring that it never spins too fast or makes any unnecessary ticking noises.

## Parallel and 3-phase operation

The Mass Combi Ultra functionality goes beyond stand-alone operation, the design also allows parallel and 3-phase configurations for larger applications up to 35 kW. For larger systems, an external transfer system is required.

## Dual AC inputs and outputs

The Mass Combi Ultra has inputs for generator or mains supply, each optimized for the power source. A robust intelligent transfer system switches seamlessly between AC power, generator and inverter, and ensures a constant power supply. Flickering lights or failure of electronic equipment belong to the past. Separate AC outputs provide the ability to power heavy users via mains and/or generator.

## Features

- For professional and semi-professional use.
- Quiet, powerful inverter with 200 % peak power.
- Compact, lightweight and hum-free thanks to HF technology.
- Pure sine wave voltage prevents malfunctions and damage to sensitive equipment such as adapters.
- High yield and more power from your batteries.

- Intelligent 3-step+ battery charger with low DC ripple current for fast charging times and long battery life.
- Power Assist: prevents blown fuses.
- A dynamic battery voltage window allows you to enjoy AC power for longer without damaging your batteries.
- Active Optima Cooling concept prevents unnecessary fan noise.
- Charges two individual battery banks simultaneously.
- An integrated MPPT solar charge controller allows for 30 % more yield from solar power for charging the batteries.
- Quick installation and reliable professional connections.
- CE, ABYC and RMRS certified.

# Specifications

## Specifications sine wave inverter

Nominal DC voltage	24 V (19-32 V)
Output voltage	180-260 V, adjustable
Output frequency	50/60 Hz ( $\pm 0.005\%$ ), configurable
Output waveform	true sine
Continuous power at 40 °C / 104 °F, cos phi 1	3500 W
Max. peak load	7000 W
Max. efficiency	$\geq 92\%$
Max. ripple on DC (battery at full load)	$< 5\%$
No-load power consumption on DC (ON/inverter OFF/OFF)	26 W / 4 W / 0 W
Energy saving mode consumption	7 W
Parallel configuration	yes, up to 10 units (for larger systems, an external transfer system is required)
3-Phase configuration	yes, up to 3x3
Synchronise with mains/generator	yes

## Specifications battery charger

Input voltage range	184-275 V
Max. input current	16 A
Max. charge current at 40 °C / 104 °F	100 A at 28.5 V, adjustable
Secondary charger output voltage	12/24 V selectable
Secondary charger output current	10 A
Battery temperature sensor	yes, included
Battery voltage sense	through MasterShunt, otherwise automatic compensation

## Specifications transfer system

AC input (generator)	50 A (switched)
AC input	30 A (switched)
AC output 1	67 A
AC output 2	50 A (switched)
AC input fuse	no
Transfer speed	seamless ( $< 1$ ms)
Transfer voltage range	184-275 V, adjustable
Transfer frequency range	35-68 Hz, adjustable

## Specifications solar input (DC)

Input voltage range	30-100 V
Max. PV peak power	750 Wp
Max. input current	19 A
Max. charge current	25 A at 28.5 V
MPP Tracker	full power at 30-80 V

## General specifications

Galvanic isolation	yes
Display/read-out	LED display
Dimensions, hwxwx	472 x 318 x 178 mm 18.6 x 12.5 x 7.0 inch
Weight	15.3 kg 33.7 lb
Compliance	CE, E-mark, ABYC, RMRS

## Technical specifications

Charge characteristic	IUoUo, automatic / 3-step+ for Gel/AGM/MLI/ flooded/spiral/traction
Recommended battery capacity	$\sim 200-600$ Ah (based on gel batteries, may differ for other types)
Ground relay	yes, configurable

Temperature range (ambient temp.)

-25 °C to 60 °C, derating > 40 °C

Cooling

-13 to 140 °F

Protection degree

vario fan

Safety class

IP23 (vertical mounting)

Humidity protection

IEC protection class I

Protections

conformal coating, max. 95 % relative humidity, non condensing  
over temperature, overload, short circuit, high/low battery voltage

Power Assist

yes

MasterBus compatible

yes