



POWER INVERTER

MODIFIED SINEWAVE

MEXMD SERIES

Installation and
Operating Instructions

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mexx **SUN**[®]

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English Version

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What is an inverter?

An inverter is a technical device to invert d.c. voltage into sinusoidal alternating voltage. In the case of the MEXXSUN inverter the d.c. voltage is usually provided by a battery. In this way, the inverter inverts direct into alternating current. The 220 V grounded protected contact socket of the inverter allows to operate electronic devices independent of position and autonomously, which usually need a 220 V a domestic power supply.

Explanation of symbols

Warning!

Failure to comply with these instructions could result in death or serious injury.

Caution!

Failure to comply with these instructions can cause functional impairment or damage of the device.

Please note!

Further information for the operation of the device.

Scope of supply

- 1x Inverter
- 1x Operating Instructions
- 1x DC connect cable
- 1x Fuse

Recommended battery cables and battery capacity

Inverter type	Input Voltage	DC Battery Cable	Fuse	Battery Capacity
MEX600MD	12V	6mm ² (1*Red/1*Black)	35A*2	≥100Ah
	24V	4mm ² (1*Red/1*Black)	20A*2	≥50Ah
MEX1200MD	12V	10mm ² (1*Red/1*Black)	35A*4	≥160 Ah
	24V	6mm ² (1*Red/1*Black)	35A*2	≥80Ah
MEX2000MD	12V	16mm ² (2*Red/2*Black)	35A*6	≥320Ah
	24V	10mm ² (2*Red/2*Black)	35A*4	≥160Ah
MEX3000MD	12V	16mm ² (2*Red/2*Black)	35A*10	≥480Ah
	24V	10mm ² (2*Red/2*Black)	35A*5	≥240Ah

⚠ Caution!

Please note the capacity!

An underrun of the recommended battery capacity can cause a loss of performance or serious use restrictions as a result of voltage drops.

⚠ **PROHIBITED REVERSE POLARITY.**

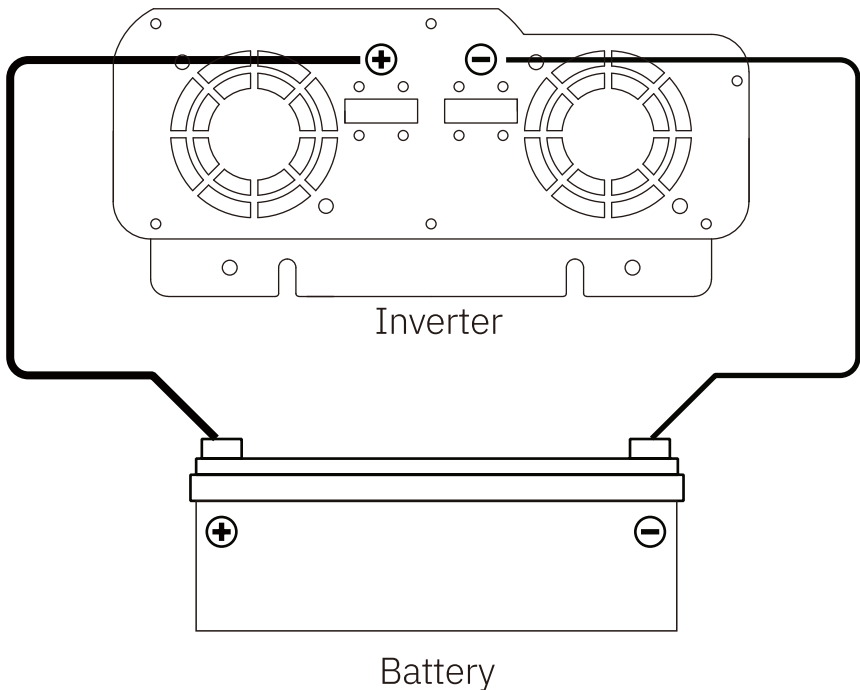
DAMAGE CAUSED BY REVERSE POLARITY WILL NOT BE COVERED BY WARRANTY.

Fuse

The fuse is built into the inverter, any intervention made outside of Mexxsun Technical Service to replace the fuse will exclude the device from the warranty.

Do not disassemble or open the inverter in any way.

Connecting an inverter and a battery with cables



Intended use

Warning!

Fire hazard!

The MEXXSUN inverter of the MEXMD series are generally build for so called “Off-Grid”-Systems and should only be used autonomously. Do not connect the inverter output (socket) with an other voltage source. Disregarding this advice is life threatening and will destroy the inverter immediately.

Caution!

Please mind the input voltage!

The inverter should only be connected to voltage sources which correspond to following provisions. 12 V=12 V, 24 V= 24 V

If connected to a higher voltage source the fuse can immediately blow and destroy the inverter.

Caution!

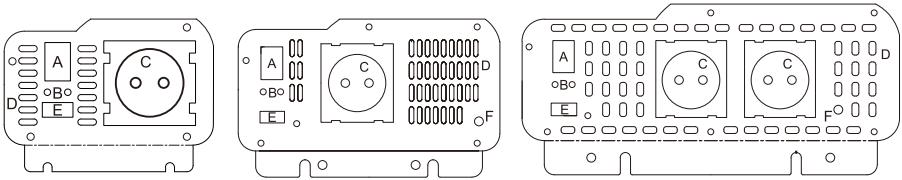
Please respect a sufficient ventilation!

The inverter produces heat loss. The device is equipped with a thermal overload protection. An insufficient ventilation can affect the function of the inverter, because the inverter can shut itself down for safety reasons. Please follow the appropriate installation advice below.

Overview of the inverter

These illustrations show the most important external components and connections.

Front view:



A. Switch ON/OFF
B. LED light

C. 220V power socket
D. Vent outlet

E. USB 5V 2.1A
F. Earth leakage

⚠ Caution!

Please note the maximum power of the electronic devices!

For currents >15 A electronic devices have to be connected directly to the terminal for direct connections.

⚠ Warning!

Risk of electric shocks

The device is always equipped with security features to prevent dangerous electronic shocks.

Operating conditions

Everything at a glance

AC voltage	220 V
	AC voltage fluctuation: max. 10%
	Frequency: 50 Hz \pm 1 Hz
Waveform	Modified Sine wave
	Lithium, SLA, AGM, GEL

Idle current consumption MEXMD Series

Caution!

Idle current consumption!

When the inverter is not in use, turn it off with the main switch. Otherwise, idle current consumption will take place according to this table and deep discharge may damage your battery.

Model	12 V	24 V
MEX600MD	approx. 0,45 A	approx. 0,22 A
MEX1200MD	approx. 0,50 A	approx. 0,25 A
MEX2000MD	approx. 0,70 A	approx. 0,35 A
MEX3000MD	approx. 0,95 A	approx. 0,48 A

Efficiency range*

System voltage	Efficiency
12 V	80% – 89%
24 V	86% – 90%

* The efficiencies depend on the type of consumer and load .
For example, the inverter typically has the highest efficiency at a load of approx . 70 %.

Recommended surrounding conditions

Operating temperature	-15 °C to 40 °C
Storage temperature	-40 °C to 85 °C
Relative humidity	20% ~ 90%

Please note!

Please mind the starting current!

Keep in mind that inductive devices (for example power drills or refrigerators etc.) often need a 3–10 times higher power at the beginning than indicated on the descriptive type plate. The maximum power of this short period should not surpass the maximum power of the inverter.

Please note!

Listen to the acoustic signal!

In case of overload an acoustic signal will sound. If the needed power is not reduced to the maximal continuous output, the inverter will shut down automatically.

Please note!

Output losses because of heat

An ambient temperature over 40°C (for ex. due to heat at the installation site or direct sunlight) can lower the specified output and efficiency.

General safety instructions and installation notes

Warning!

Limited number of users

The following persons should use this product only under the supervision of another responsible person:

- persons with limited physical aptitude
- persons with limited mental aptitude
- persons with limited sensory aptitude.
- children under the age of 12
- Use the device only in accordance with its designated use.
- Store the device out of the reach of children.
- Maintenance and repairs may only be performed by a specialist who is familiar with the latest guidelines (for ex. VDE- standards).

Warning!

Installation instructions

- The installation of this equipment may only be performed by trained and authorized personnel and in compliance with all applicable safety regulations and guidelines.
- Especially when used on a boat an incorrect installation can lead to corrosion damage. Therefore the installation should be performed by trained boat electricians.

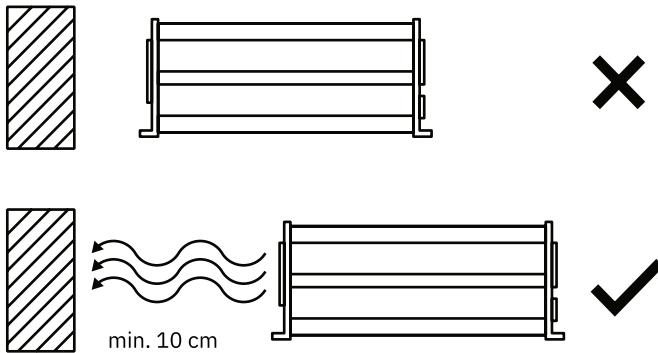
Warning!

Important mounting instructions!

To reduce the risk of fire, injuries and electronic shocks, please note the following instructions:

- The device can be installed horizontally or vertically.
- Do not cover the ventilation slits and ensure adequate ventilation. The installation site of the inverter has to be well ventilated.
- Install the inverter only on solid mounting surfaces.
- Do not pull the cable.

- Grasp all cables tightly during the mounting and dismantling.
- Always start with connecting the input voltage and switch the inverter on afterwards.
- Do not install near heat sources or in direct sunlight.
- Avoid dust, humidity and flammable or caustic substances near the inverter.
- The inverter heats up during operation, keep away from heat-sensitive materials.
- Do not drop the inverter and avoid shocks.
- Do not place any objects on top of the inverter.
- Do not open the device.
- Only use dry wipes for cleaning. Switch off the inverter before cleaning.
- Switch of the inverter before all kinds of work.
- In case of sharp-edged ducts please use an empty conduit or cable bushing.
- Do not use the same duct for the 220 V output cable and the DC cable.
- Only use the device if the inverter is without any damage.
- Do not cover the ventilation slits.
- The power supply must be switched off before handling the device.



Commissioning of the inverter

1. Make sure that the on/off button of the inverter is switched “off”. If the input voltage is provided by a supply unit, switch it off as well.
2. Connect the inverter to the DC voltage source with the delivered cables.
3. Switch on the inverter.
4. Switch on all of the electronic devices one by one.

Please note!

Sparking!

The connection process to the input DC voltage source leads to sparking because of the charging of the internal capacitors.

Wintering / prolonged non-utilization

Please note!

When the inverter isn't in use for longer periods of time, please follow this advice to protect your battery from discharge:

1. Disconnect all consumers from the inverter
2. Disconnect the battery from the inverter by using a disconnecter or by disconnecting the cables.

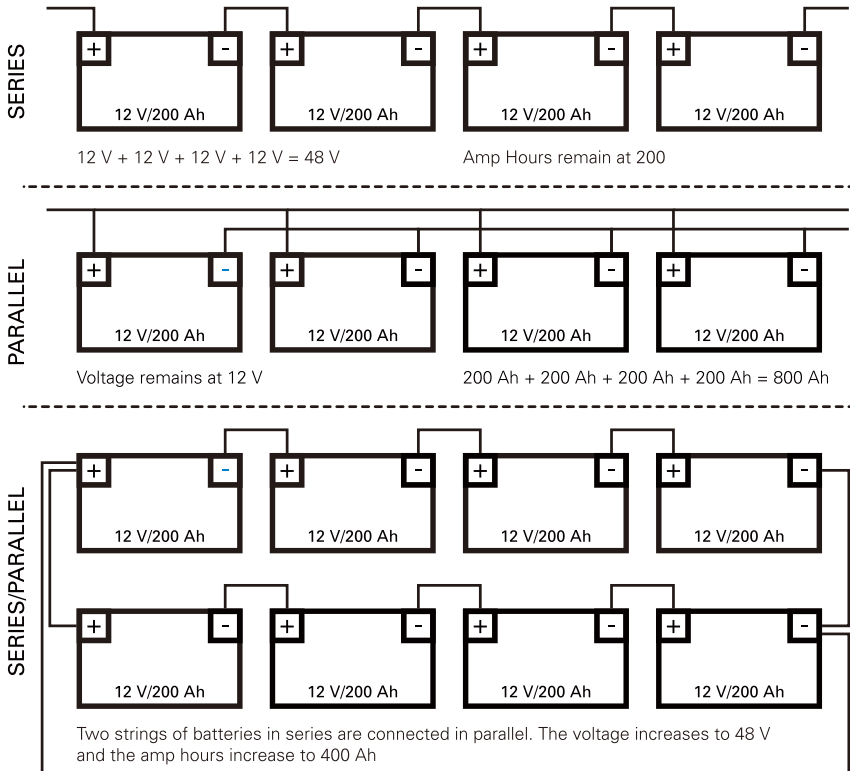
If the battery isn't completely disconnected, a minimal current consumption by the inverter will continue to take place.

Possible configurations of batteries

If several batteries are used, there are various con figuration possibilities of the battery banks depending on the inverter model (12 V, 24 V).

- Series connection (serial): voltages add up, capacity remains unchanged.
- Parallel connection (parallel): capacities add up, voltage remains unchanged.
- Series and parallel connection (serial and parallel): capacities and voltages add up.

Examples:



Technical information

Items		Model			
		MEX600MD	MEX1200MD	MEX2000MD	MEX3000MD
Continuous power		600W	1200W	2000W	2500W
Surge Power		1200W	2400W	4000W	6000W
Dimension (L*W*H)mm		150*105*55	210*150*70	290*220*90	320*220*113
	PCS/CTN	16	6	2	2
Packing	KGS/CTN	19	16	12	15
	MEAS(L*W*H)cm	50*37.5*32	43*32*38	43*30.5*36	48*35*52
Input Voltage		10-15VDC(12V version),20-30VDC(24V version),			
Output Voltage		220V-240VAC \pm 10%			
Output Frequency		50Hz \pm 10%			
Efficiency		> 80%			
Output Waveform		Modified Sine Wave			
Protection Feature		Low Battery Alarm, Low Battery Shutdown, Over Voltage, Over Temperature, Over Load, Short Circuit.			
Battery Types		Open & sealed lead acid battery			

Safety features



Please note!

Restart necessary!

The inverter is equipped with several safety features to protect the inverter and all its components as for example the batteries.

The inverter is equipped with a thermic and electronic over-/undervoltage protection. If the required values are exceeded or not reached, the device disconnects the AC output and must be switched off and on again before restarting via the ON/OFF switch.

Caution!

The device remains switched on when the AC output is disconnected. There is a risk of deep discharge of connected batteries due to the power consumption of this standby mode.

The inverter disconnects the AC output in the following cases:

- internal temperature too high
- required output load too high
- input voltage too high or too low

Self error correction

Acoustics buzzer alarms

When applying the inverter to acoustics devices, some inferior acoustics devices will buzz, this is because the output wave from the inverter is modified sine wave inverter.

TV Interference

You can get minimum interference through use of a filter. On some occasions, when the interference of every weak signals becomes too obvious, you can try the following:

- Place the inverter far from the TV and TV antenna.
- Try to change the direction of TV signals cable and TV antenna to reduce the interference to minimum.
- Use screen cable antenna of highly quality.

Problem: No output voltage

Possible Causes	Solution
Battery voltage too low	Recharge or replace the battery
Overload	Reduce the load
Inverter thermal protection	Cool the inverter and place it in the place with good ventilation; Reduce the load.
Inverter start-up fail	Repeat starting the inverter
Reverse polarity connection and fuse melted	Replace the fuse with a fuse of equivalent value.

Problem: Inverter no response

Possible Causes	Solution
Poor contact between battery and inverter	Reconnect them
Reverse polarity connection and fuse melted	Replace the fuse with a fuse of equivalent value.

Problem: Output voltage low

Possible Causes	Solution
Input voltage too low	Make sure input voltage is within the rated range.
Overload	Reduce the load

Problem: Low voltage alarm

Possible Causes	Solution
Battery no power	Recharge the battery
Battery voltage too low or poor connection	Recharge the battery, check terminals connection or clean terminal with a dry cloth

Caution!

Immediately eliminate error sources!

Make sure that error sources are eliminated. Multiple restarts due to unsolved errors can destroy the inverter.

Especially prevent short circuits and polarity reversals because they can destroy the device despite protection.

Guarantee

The statutory warranty period shall apply. In case of complaints, please contact the office located in your country or the point of sale .

In order to receive a quick response to your guarantee request, please send the following documents.

- copy of invoice with purchase date
- justification of complaints or error description

Please note!

In the following cases the liability for damage is excluded:

- damage of the device caused by overvoltage and mechanical impacts
- mounting and connection errors
- inappropriate use of the device
- modification of the device without permission of the producer

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