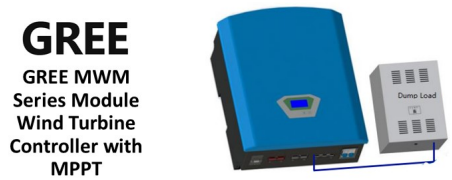



# GREE MWM Series Module Wind Turbine Controller with MPPT User Manual



Contents



GREE

## GREE MWM Series Module Wind Turbine Controller with MPPT


**Specifications**

- Product Model: HCM1000-48-48
- Version: V1.3
- Features: MPPT control, charge and discharge control, grid-tied system support, off-grid system support, energy storage system support, optional charge function, complete protection function, high-quality electrical components and parts, optional additional functions
- Communication Interfaces:
- RS232/RS485/RJ45/GPRS/Bluetooth/Zigbee

## Product Usage Instructions

- Avoid use in flammable or explosive environments.
- Do not change electrical components yourself to avoid warranty issues.
- Disconnect AC input and DC output before installation or maintenance.
- Ensure good ventilation and heat dissipation.
- Use copper cable for line connections with appropriate diameter.
- Check existing wiring for good condition before use. Analyze fault reasons before restarting the controller after alarms.

**Basic Information**

- Applicability to grid-tied, off-grid, and energy storage systems.
- MPPT track point settable for optimal power output.
- Optional charge function.
- Complete protection function.
- High-quality electrical components and parts.
- Optional additional functions like PV control, wind speed measurement, rotational speed control, and temperature compensation.
- Multiple communication interfaces available for monitoring (RS232/RS485/RJ45/GPRS/Bluetooth/Zigbee).

**Product Structure**
The product structure includes:

- Battery terminal
- Dump load terminal
- Wind turbine terminal
- Communication device port
- Manual brake switch
- Browse button
- LCD display
- Unload indicator light

**Frequently Asked Questions (FAQ):**

**Q: What should I do if the controller alarms?**
A: Do not restart the controller immediately. Analyze the fault reasons and repair them first before restarting.

## Important Safety Warning

Before Using the controller, please read all instructions and cautionary markings on the unit and this manual. Store the manual where it can easily be accessed.
This manual includes all safety warnings, installation, and operation guidance of MWM wind controllers.

- Before installing and using this controller, read all instructions and cautionary markings on the controller and all appropriate sections of this guide.
- Do not use the machine in the place where has flammability and explosive gas/articles. Beware of flames and sparks.
- Please Contact our after-sales person if the machine doesn’t work.
- Do not change the electrical components and parts yourself, or we will not be responsible for the warranty items and related duties.
- Please disconnect the AC input and DC output from controller before install or maintain the machine. Besides, do not touch the controller in 5 mins after disconnection.
- Please install the machine indoor to avoid the rain water enter the controller inside.
- Please keep good ventilation and heat dissipation.
- Please install a circuit breaker outside the controller if conditions are allowed.
- Please use copper cable for line connection, and choose the right diameter of cable according to the actual current.
- To avoid a risk of fire and electric shock, make sure the existing wiring is in good condition and that the wire is connected tightly.
- Do not restart the controller immediately when it alarms. Please analyze the fault reasons and repair them at first.

## Basic Information

**Introduction and Features**
The MWM series wind power generation controller is the controller which integrates MPPT control and charge and

discharge control. The power curve can be set by setting the wind turbine voltage and current, which can ensure the wind turbine work with the best power output all the time.

**Features:**

- Can be applied to grid-tied system, off-grid system and grid-tied energy storage system. Charge function is optional.
- MPPT track point settable
- Complete protection function
- Electrical components and parts in high quality.
- Several functions are optional, such as PV control function, wind speed measure function, rotational speed control function and temperature compensation function.
- RS232/RS485/RJ45/GPRS/Bluetooth/Zigbee optional. ( It can be monitored by app for those with GPRS/Bluetooth/RJ45 connection)

## Product Structure

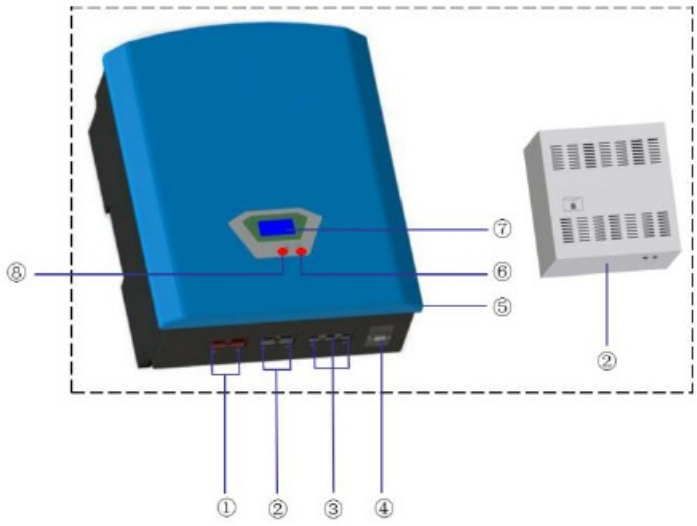



Chart1. Product Overview (1-3kW)

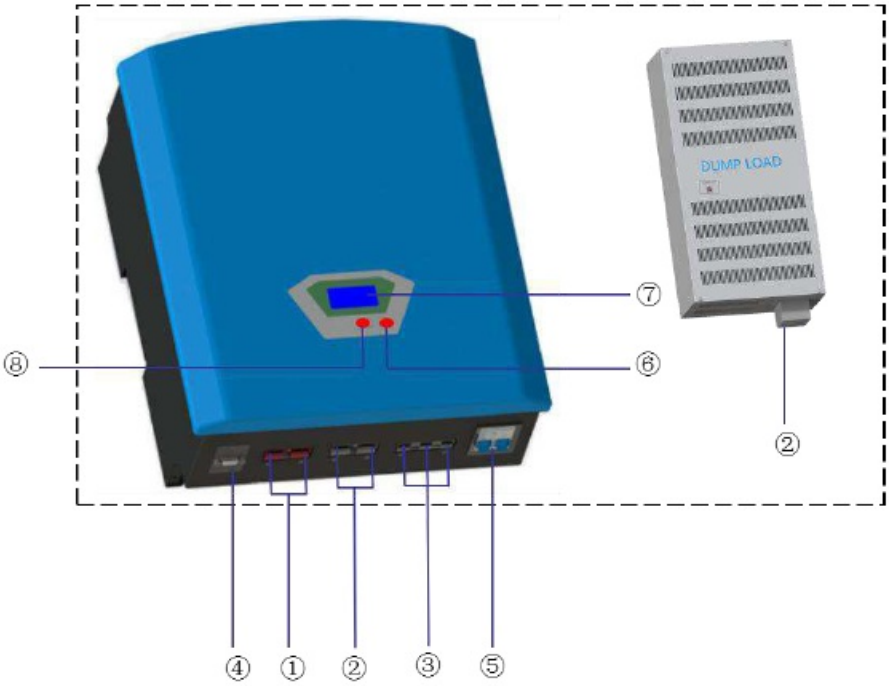



Chart2. Product Overview (5-10kW)

| | | | |
|---|---|---|---|
| ① | Battery terminal | ⑤ | Manual brake switch |
| ② | Dump load terminal | ⑥ | Browse button |
| ③ | Wind turbine terminal | ⑦ | LCD display |
| ④ | Communication device port | ⑧ | Unload indicator light |

## Product Installation

### Installation Notes

1. The machine should be kept indoors and well ventilated;
2. Environment temperature: -20 +40°C; Humidity: <=95% no condensing
3. Altitude should not be more than 4000m ( 1000 m derating according to the GB/T3859.2regulations).
4. Avoid using the machine in direct sunlight, sun exposure, rain, humidity, acid fog, and dust.
5. The machine can only charge for the battery in the rated voltage range.
6. The machine can only be connected to the wind turbine and PV with allowed power and voltage.

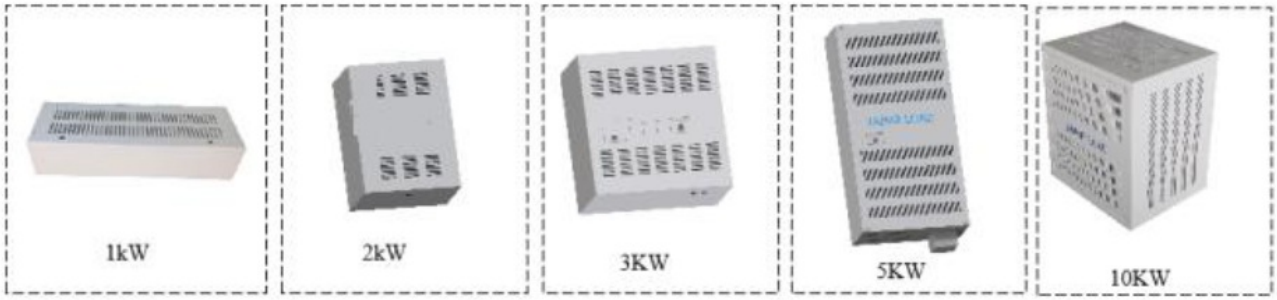



Chart3: Dump Load with different power

## Installation and Wiring

### Installation Steps

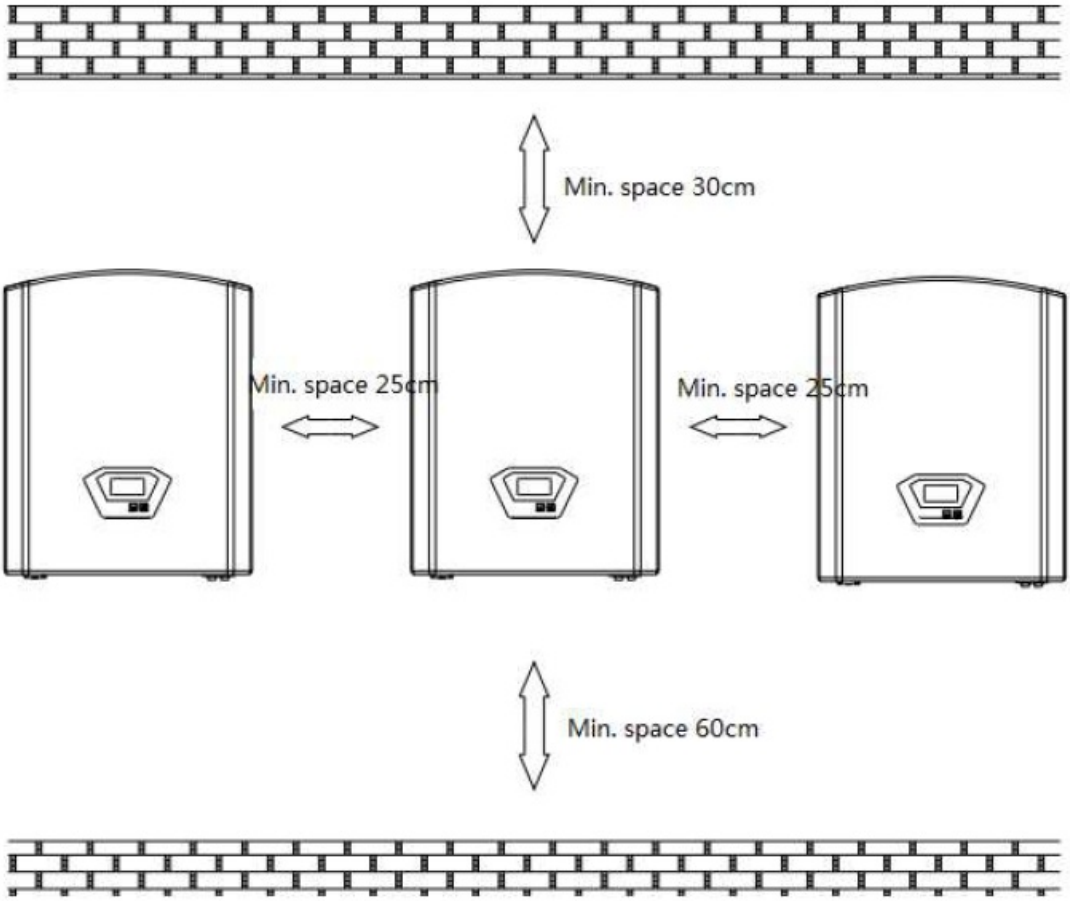



Chart 4: Installation Overview

### Installation Steps

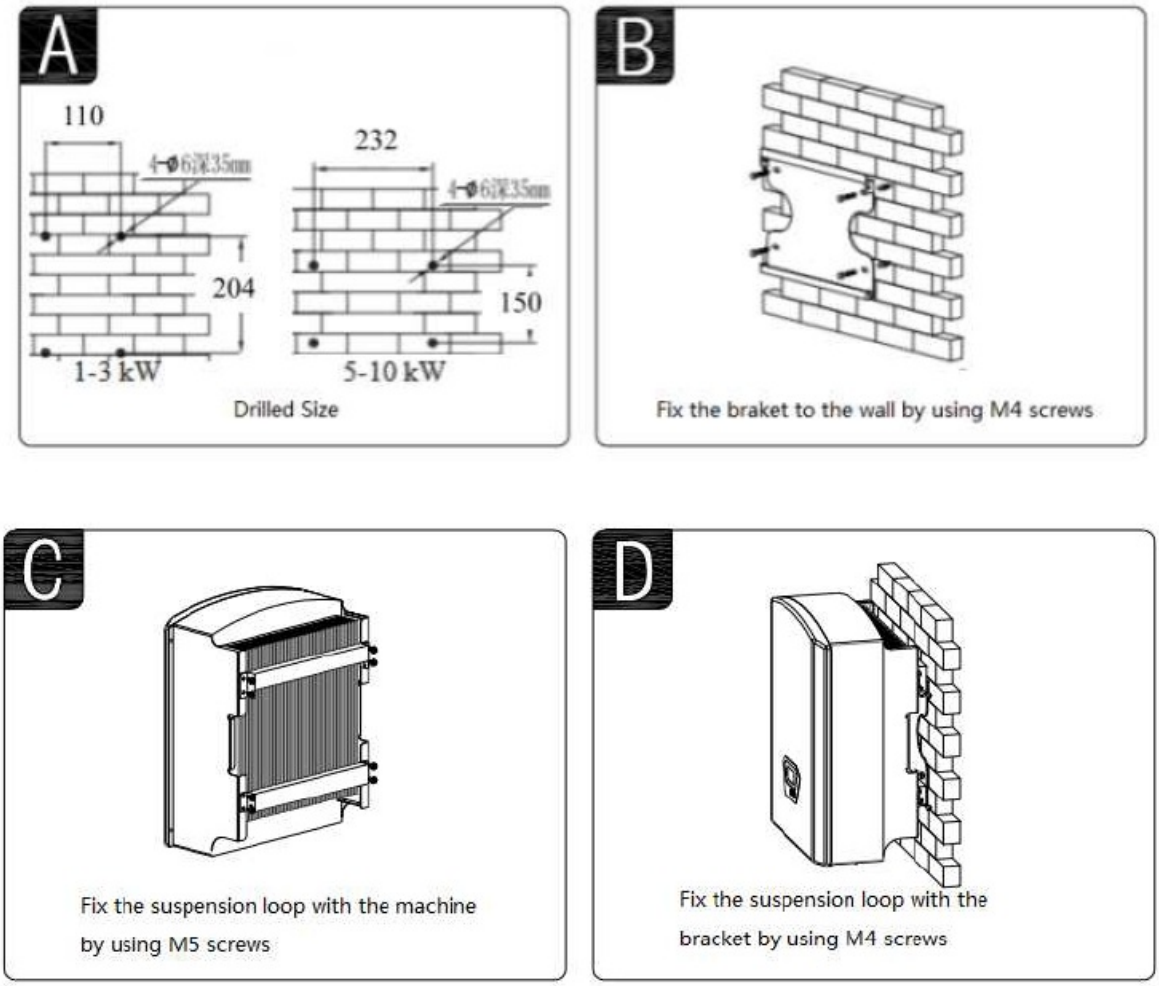
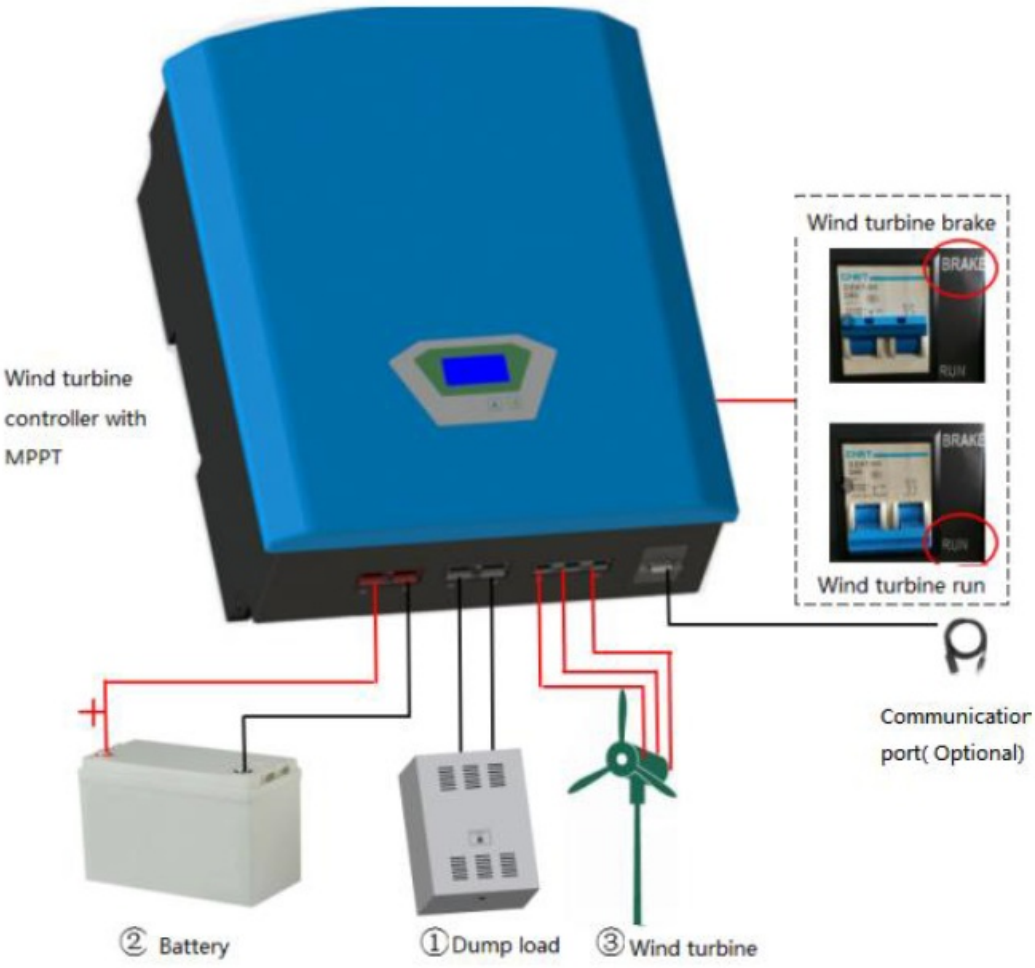
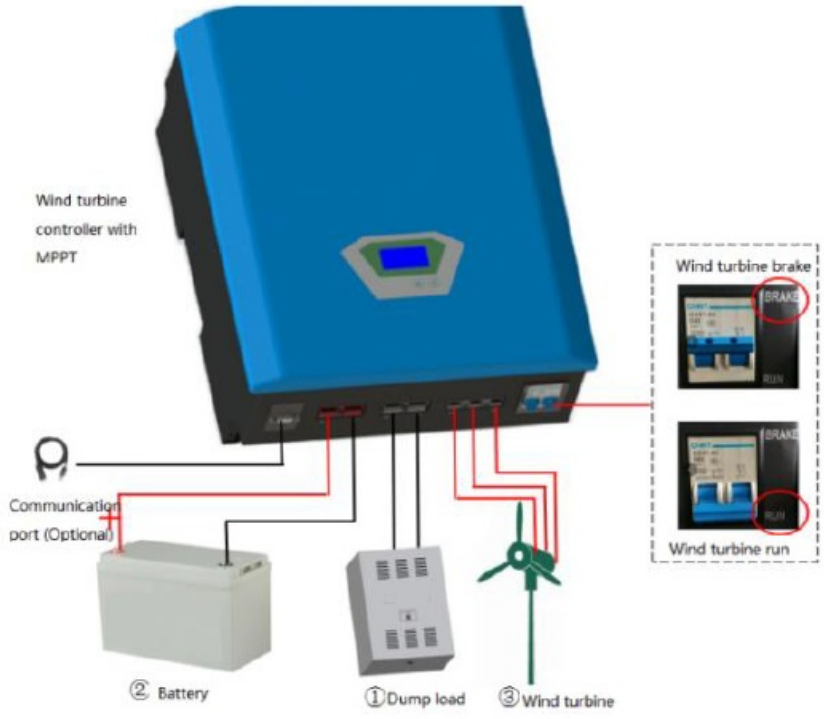



Chart5: Installation Steps

**Electrical Connection**




(1-3kW)




(5-10kW)

**Chart 6: System Overview**

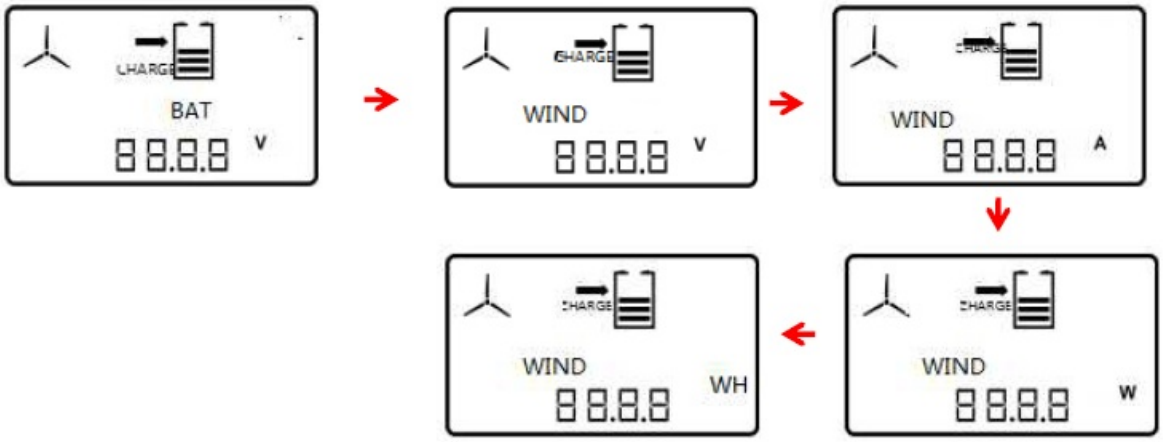
Please connect those parts according to the order of ①②③, and notice the following items.

1. Connect Dump load to the controller terminal “DUMPLOAD” by using copper conductor cable.
2. Connect the battery bank to the controller by the terminal which marks “BATTERY”. (do not reversed the connection of positive and negative terminals)
3. When wind turbine is still or running in a low speed, connects its output cable to the “WIND INPUT” terminal on the controller.
4. Check all the connection to make sure they are connected rightly and tightly.

## Operation Interface Introduction

### LCD Display

After the power is connected, the whole screen is in a browsing status. It shows battery voltage, and can be changed to the following information by press related buttons.




### LCD Information Define

| Name | Icon | Status |
|---|---|---|
| Wind Turbine | | Rotate means wind turbine works normally |
| | BRAKE | Brake by hand |
| Battery | | Charging |
| | | Fully charged. flickering for over voltage, stop flickering when it recover from over voltage |
| | | Flickering means over -discharge |
| Browse button | Scan | Press it to enter next LCD display.<br>Press it for 5s to enter the brake status<br>Press it for another 5s to recover charging status. |
| Dump load indicator light | Dump | Red light is on means the machine is on unload status or brake status.<br>The light is off when it works normally. |

## Trouble Shooting

| Fault Type | Description | Possible reasons and solutions |
|---|---|---|
| No display on LCD | The connection between the battery and the cont roller is not tight | Check the wiring, and reconnect it. |
| | DC breaker is not on between battery and control ler | Turn on the breaker |
| | Low battery voltage | The system parameters are not matched c orrectly. Recheck the label and parameters on the machine. |
| | | The battery doesn't work. Change a new o ne. |
| | Battery is connected in wrong polarity to battery i nput terminals. | Need change the internal fuse in controller, and reconnect the battery. |
| No charging | The connection cable between wind turbine and controller is loose. | Reconnect and fix the cables. |
| | Wind turbine output voltage hasn't reached the charging voltage, | Check whether the system voltage is reaso nable. |
| | Wind turbine is in "Brake" status | Wait the wind turbine recover if it brakes au tomatically.<br>Press the button for 5s to release the brake status if it brakes by hand. |
| | Battery is already fully charged. | Check if the battery voltage has reached it s output overvoltage. |

## Technical Parameters

| | |
|---|---|
| Model | HCM1000-48-48 |
| Type | Boost |
| **Wind Turbine Input** | |
| Rated input power | 1kW |
| Rated input voltage | 48V |
| Input voltage range | 0~64V |
| Start charge voltage | 12Vdc (factory default, 8Vdc~64Vdc settable) |
| Rated input current | 21Adc |
| Brake by hand | Keep press the button for 5s to unload completely, and then recover by hand. |
| | Switch “ON” the brake switch |
| Brake by over current | 21A (factory default, 0~25A settable)unload completely when reached the set curren t, and recover automatically after working 10mins. |
| Brake by overvoltage | Refer to “output overvoltage” control |
| **Charge Parameters** | |
| Rated battery voltage | 48Vdc |
| Start unload voltage | 56Vdc (factory default, 44Vdc~64Vdc settable) |
| Complete unload voltage | 58Vdc (factory default, add 2V to the start unload voltage) |
| Max. Output current | 21Adc |
| **General Parameters** | |
| Rectifier mode | Uncontrolled rectifier |
| Display mode | LCD |
| Display information | DC output voltage, wind turbine voltage/current/power.<br>For those with charge control function, Battery voltage is showed as well. |
| Monitoring mode | RS232 |
| Monitoring Contents | Real-time display: DC output voltage, wind turbine voltage/current/power. |

| | |
|---|---|
| | For those with charge control function, Battery voltage is showed as well. |
| | Parameter setting: Output overvoltage point, wind turbine over current point, wind tur bine start voltage, and wind turbine brake settings. |
| Lightning protection | YES |
| Conversion efficiency | ≥92% |
| Static loss | 2W |
| Ambient temperature | -20℃ +40℃ |
| Humidity | 0~90%, No condensing |
| Noise | ≤65dB |
| Cooling mode | Forced air cooling |
| Installation mode | Wall-mounted |
| Cover protection class | IP42 |
| Product dimension (W*H *D) | 300×375×145mm |
| Product net weight | 10kg |
| Dump load dimension ( W*H*D) | 360*80*120mm |
| Dump load net weight | 2.8kg |
| **Note: Part of parameters can be adjusted according to customer's specific demand.** | |

## Warranty

The product shall be in warranty for one year from production. Please take contract as the final one if it has special terms on warranty.

## Documents / Resources

| | |
|---|---|
|  | GREE MWM Series Module Wind Turbine Controller with MPPT [pdf] User Manual<br>MWM Series Module Wind Turbine Controller with MPPT, MWM Series, Module Wind Turbine C ontroller with MPPT, Turbine Controller with MPPT, Controller with MPPT |

## References

- User Manual

Manuals+, Privacy Policy

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