

PerGar MDS160A 1600V

PerGar MDS160A 1600V Three Phase Power Diode Bridge Rectifier Module User Manual

Model: MDS160A 1600V

1. INTRODUCTION

This manual provides essential information for the safe and effective use of the PerGar MDS160A 1600V Three Phase Power Diode Bridge Rectifier Module. Please read this manual thoroughly before installation and operation to ensure proper functionality and safety.

The MDS160A 1600V is a high-power three-phase diode bridge rectifier module designed for converting alternating current (AC) to direct current (DC). It features a robust welded structure, an isolated mounting base, and unique glass passivation technology for high reliability and excellent performance characteristics.

2. SAFETY INFORMATION

WARNING: This device operates with high voltage and current. Improper handling can result in severe injury or death. Only qualified personnel should install, operate, or maintain this module.

- Always disconnect power before performing any installation, wiring, or maintenance.
- Ensure proper grounding of the system.
- Use appropriate personal protective equipment (PPE), including insulated gloves and safety glasses.
- Verify all connections are secure and correct before applying power.
- Do not exceed the specified maximum voltage and current ratings.
- Install the module in an environment free from excessive moisture, dust, and corrosive gases.

3. PRODUCT FEATURES

- **Optimal Work Parameters:** Output DC current of 160A, maximum voltage of 1600V, and forward/reverse leakage current of 4mA.
- **Isolated Mounting Base:** Engineered with an isolated mounting base and glass passivation technology for high reliability.

- **Exceptional Rectifier Performance:** Features a superior welded structure, excellent power cycle, and robust temperature characteristics.
- **Versatile Application:** Suitable for PWM inverter current input, battery charging, and various other applications requiring AC to DC conversion.
- **User-Friendly Interface:** Simple 3-phase, 5-terminal design for straightforward connection and operation.

4. SPECIFICATIONS

Parameter	Value
Model	MDS160A 1600V
Maximum Output Current	160A
Maximum Voltage	1600V
Terminal Count	5
Forward and Reverse Leakage Current	4mA
Insulation Voltage	2500VAC
Maximum Rated Junction Temperature	150°C
Package Dimensions	3.94 x 1.97 x 1.57 inches
Item Weight	11.1 ounces
Manufacturer	PerGar

5. SETUP AND INSTALLATION

The MDS160A 1600V module is designed for straightforward integration into existing systems. Proper installation is crucial for performance and safety.

1. **Mounting:** Securely mount the rectifier module to a suitable heatsink using appropriate fasteners. The isolated mounting base ensures electrical isolation from the heatsink, but proper thermal contact is essential for heat dissipation.
2. **Wiring Connections:** The module features 5 terminals for connection. Refer to the diagram on the module label for correct terminal identification. Typically, three terminals are for the AC input phases, and two are for the DC output (+ and -). Ensure all connections are tight and use appropriately sized wiring for the expected current.
3. **Input Power:** Connect the three-phase AC power supply to the designated input terminals.
4. **Output Load:** Connect the DC load to the positive (+) and negative (-) output terminals.
5. **Verification:** Before applying power, double-check all wiring connections for correctness and security. Ensure no loose wires or short circuits are present.

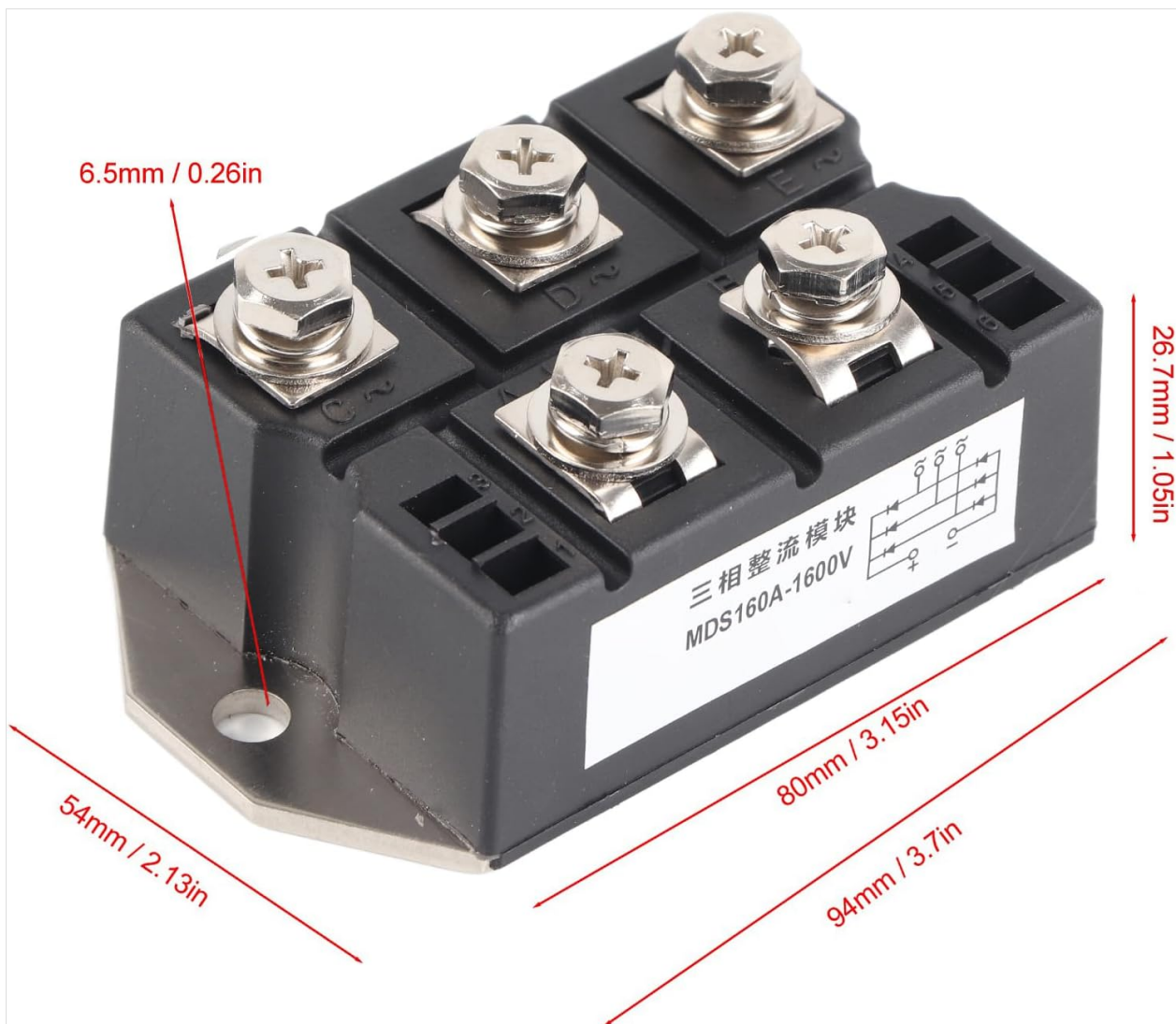


Figure 1: PerGar MDS160A 1600V Rectifier Module with key dimensions. This image illustrates the physical size and terminal layout of the module, showing measurements in millimeters and inches.



Figure 2: Top view of the PerGar MDS160A 1600V Rectifier Module, showing the five screw terminals and the circuit diagram label. The label indicates the three-phase AC input and DC output connections.

6. OPERATING INSTRUCTIONS

Once properly installed and wired, the rectifier module operates by converting the three-phase AC input into a DC output.

1. **Power On:** After verifying all connections and safety precautions, apply the three-phase AC power to the module.
2. **Output Monitoring:** Monitor the DC output voltage and current to ensure they are within the expected range for your application.
3. **Heat Dissipation:** Ensure adequate airflow around the heatsink to prevent overheating, especially during high-current operation. The module's performance is dependent on effective heat dissipation.



Figure 3: The PerGar MDS160A 1600V Rectifier Module integrated into an industrial control panel, demonstrating a typical application environment. This image shows the module connected to other components within a larger system.

7. MAINTENANCE

The MDS160A 1600V module is designed for long-term reliability with minimal maintenance. However, periodic checks can help ensure optimal performance and longevity.

- **Visual Inspection:** Periodically inspect the module and its connections for any signs of damage, corrosion, or loose wiring.
- **Cleaning:** Ensure the module and heatsink are free from dust and debris, which can impede heat dissipation. Use compressed air or a soft brush for cleaning.
- **Connection Integrity:** Re-tighten terminal screws if necessary, ensuring they are secure but not over-tightened.
- **Environmental Conditions:** Verify that the operating environment remains within the specified temperature and humidity ranges.

8. TROUBLESHOOTING

If the rectifier module is not functioning as expected, consider the following common issues and solutions:

- **No DC Output:**
 - Check if AC input power is present and correctly connected.
 - Verify all terminal connections are secure.
 - Inspect for internal damage (e.g., burnt components, though this is rare for a robust module).
- **Low DC Output Voltage:**
 - Ensure the AC input voltage is within the expected range.
 - Check for excessive load on the DC output.
- **Overheating:**
 - Verify the heatsink is adequately sized and properly mounted.
 - Ensure sufficient airflow for cooling.
 - Check if the module is operating within its current and voltage limits.
- **Unstable Output:**
 - Check for loose connections or intermittent power supply.
 - Ensure the load is stable and not causing fluctuations.

For issues not resolved by these steps, contact a qualified technician or the manufacturer for assistance.

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided at the time of purchase or contact PerGar customer service. Ensure you have your product model number (MDS160A 1600V) and purchase details available when seeking support.

You can visit the [PerGar Store on Amazon](#) for more information about the brand and other products.