

## ebm-papst R1G225-AF11-52

# EBM-PAPST R1G225-AF11-52 Motorized Impeller User Manual

Model: R1G225-AF11-52

## 1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the EBM-PAPST R1G225-AF11-52 Motorized Impeller. Please read this manual thoroughly before attempting to install or operate the device. Retain this manual for future reference.

## 2. SAFETY INFORMATION

Adherence to safety instructions is crucial to prevent personal injury and damage to the product. Always observe local safety regulations and standards.

- **Electrical Safety:** Ensure the power supply is disconnected before any installation, maintenance, or troubleshooting. Only qualified personnel should perform electrical connections.
- **Handling:** Handle the impeller with care to avoid damage to blades or motor components.
- **Mounting:** Securely mount the impeller to prevent vibration and ensure stable operation.
- **Protective Measures:** Ensure all necessary guards and protective covers are in place before operation to prevent contact with moving parts.
- **Environment:** Operate the impeller within its specified environmental conditions (temperature, humidity) to ensure optimal performance and longevity.

## 3. PRODUCT OVERVIEW

The EBM-PAPST R1G225-AF11-52 is a high-performance motorized impeller designed for various air movement applications. It features a compact design, efficient operation, and integrated control capabilities.



An image showing the EBM-PAPST R1G225-AF11-52 motorized impeller, featuring its compact design and blade structure.  
This unit is designed for efficient air movement in various systems.

## Key Features:

- **Motorized Impeller:** Integrated motor and impeller for a compact solution.
- **Dimensions:** Radial design with a 225 mm diameter.
- **Airflow:** Capable of delivering up to 665 CFM.
- **Voltage:** Operates on 48VDC.
- **Power:** 95 Watts.
- **Speed:** Maximum rotational speed of 2700 RPM.
- **Noise Level:** 67 dBA.
- **Control:** Features PWM (Pulse Width Modulation) control for variable speed.
- **Monitoring:** Includes a speed sensor for feedback.
- **Protection:** Equipped with locked rotor protection.
- **Construction:** Fiberglass reinforced PA6 and nylon blade for durability.

## 4. SETUP AND INSTALLATION

---

Proper installation is critical for the performance and longevity of the impeller.

### 4.1 Unpacking

- Carefully remove the impeller from its packaging.
- Inspect for any visible damage that may have occurred during transit. Do not install if damage is apparent.
- Verify all components are present according to the packing list.

### 4.2 Mounting

- Choose a mounting location that allows for unrestricted airflow and easy access for maintenance.
- Ensure the mounting surface is stable and capable of supporting the weight and operational forces of the impeller.
- Use appropriate fasteners to secure the impeller firmly. Avoid over-tightening.
- Ensure proper alignment to prevent undue stress on the motor and bearings.

### 4.3 Electrical Connection

**WARNING:** Electrical connections must be performed by a qualified electrician in accordance with all local and national electrical codes.

- The impeller uses a 4-wire lead connection. Refer to the wiring diagram provided with the product or contact EBM-PAPST technical support for specific pin assignments.
- Connect the impeller to a stable 48VDC power supply.
- Connect the PWM control input for speed regulation.
- Connect the speed sensor output to your monitoring system, if applicable.
- Ensure all connections are secure and properly insulated.

## 5. OPERATING INSTRUCTIONS

---

Once installed and connected, the impeller can be operated as follows:

### 5.1 Powering On/Off

- **Power On:** Apply 48VDC power to the impeller. The impeller will typically start at a default speed or according to the PWM signal.
- **Power Off:** Disconnect the 48VDC power supply to stop the impeller.

### 5.2 Speed Control (PWM)

- The impeller's speed can be adjusted using a Pulse Width Modulation (PWM) signal applied to the designated control wire.
- Varying the duty cycle of the PWM signal will change the impeller's rotational speed. Consult the product datasheet for specific PWM frequency and duty cycle ranges.

### 5.3 Speed Monitoring

- The integrated speed sensor provides feedback on the actual rotational speed of the impeller. This output can be connected to a control system for monitoring and closed-loop control.

## 6. MAINTENANCE

---

Regular maintenance ensures optimal performance and extends the lifespan of your EBM-PAPST impeller.

### 6.1 Cleaning

- **Frequency:** Inspect the impeller blades and housing for dust and debris accumulation periodically, depending on the operating environment.
- **Procedure:** Disconnect power before cleaning. Use a soft brush, compressed air, or a damp cloth to remove dirt. Do not use harsh chemicals or abrasive materials.

### 6.2 Inspection

- Regularly check all electrical connections for tightness and signs of wear or corrosion.
- Inspect mounting hardware to ensure the impeller remains securely fastened.
- Listen for unusual noises or vibrations during operation, which may indicate a problem.

### 6.3 Lubrication

- The EBM-PAPST R1G225-AF11-52 motorized impeller typically features sealed bearings that do not require user lubrication. Do not attempt to lubricate the bearings.

## 7. TROUBLESHOOTING

---

This section provides guidance for common issues. For problems not listed here, contact EBM-PAPST technical support.

Problem	Possible Cause	Solution
---------	----------------	----------

Problem	Possible Cause	Solution
Impeller does not start	No power supply; Incorrect wiring; Locked rotor protection activated.	Check 48VDC power supply; Verify wiring connections; Cycle power to reset locked rotor protection.
Low or inconsistent speed	Incorrect PWM signal; Insufficient power supply; Obstruction.	Verify PWM signal parameters; Check 48VDC supply voltage; Inspect for obstructions in airflow path.
Unusual noise or vibration	Loose mounting; Debris on blades; Bearing wear.	Tighten mounting hardware; Clean blades; If bearing wear is suspected, contact support.
Overheating	Restricted airflow; Overload.	Ensure clear airflow paths; Verify the impeller is operating within its specified load limits.

## 7.1 Locked Rotor Protection

The impeller is equipped with locked rotor protection. If the impeller blades are obstructed and cannot rotate, the motor will automatically shut down to prevent damage. Remove the obstruction and cycle the power to reset the protection.

## 8. SPECIFICATIONS

Feature	Specification
Brand	ebm-papst
Model	R1G225-AF11-52
Type	Motorized Impeller (Radial)
Diameter	225 mm
Airflow	665 CFM
Voltage	48 VDC
Wattage	95 Watts
Noise Level	67 dB
Maximum Rotational Speed	2700 RPM
Power Connector Type	4-Pin Wire Leads
Control Features	PWM Control, Speed Sensor
Protection Features	Locked Rotor Protection
Blade Material	Fiberglass Reinforced PA6, Nylon

Feature	Specification
UPC	763236725856
Manufacturer	EBM-PAPST

## 9. WARRANTY AND SUPPORT

For specific warranty terms and conditions, please refer to the documentation provided at the time of purchase or contact your authorized EBM-PAPST distributor or the manufacturer directly. Warranty coverage typically varies by region and product type.

### Technical Support:

If you encounter issues that cannot be resolved using the troubleshooting guide, or require further technical assistance, please contact EBM-PAPST customer support or your product supplier. Have your model number (R1G225-AF11-52) and purchase information ready when contacting support.

**EBM-PAPST Contact Information:** Please visit the official EBM-PAPST website for the most current contact details and support resources.