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› Argon THRML 60mm Radiator Cooler for Raspberry Pi 5 User Manual

Argon Forty AR-THRML-60MM-RC

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Model: AR-THRML-60MM-RC

1. INTRODUCTION

The Argon THRML 60mm Radiator Cooler is designed to provide superior thermal management for your Raspberry Pi 5. This cooler features an aluminum tower-style radiator, dual copper heat pipes, and an integrated 60mm PWM blower fan to efficiently dissipate heat from the CPU and PMIC, preventing overheating and performance throttling. This manual provides detailed instructions for installation, operation, maintenance, and troubleshooting to ensure optimal performance of your cooler.

2. SAFETY INFORMATION

- Always disconnect power from the Raspberry Pi 5 before installing or removing the cooler.
- Handle the cooler and Raspberry Pi 5 with care to avoid damage to components.
- Ensure proper ventilation around your Raspberry Pi 5 setup.
- Keep out of reach of children.
- Do not expose the cooler to moisture or extreme temperatures.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- Argon THRML 60mm Radiator Cooler unit with integrated fan
- Mounting brackets
- Spring-loaded push pins
- Thermal compound (for CPU)
- Thermal pad (for PMIC chip)

4. SETUP AND INSTALLATION

Follow these steps to install the Argon THRML Radiator Cooler on your Raspberry Pi 5:

1. **Prepare the Raspberry Pi 5:** Ensure your Raspberry Pi 5 is powered off and disconnected from all power sources.
2. **Apply Thermal Compound:** Apply a small amount of the provided thermal compound to the center of the Raspberry Pi 5's CPU. Spread it thinly and evenly across the CPU surface.
3. **Apply Thermal Pad:** Place the thermal pad onto the PMIC chip of the Raspberry Pi 5.
4. **Position the Cooler:** Carefully align the cooler's base with the CPU and PMIC on the Raspberry Pi 5. Ensure the heat pipes are positioned correctly over the components.
5. **Secure the Cooler:** Use the snap-on brackets and spring-loaded push pins to firmly secure the cooler in place. Apply even pressure until the pins click into position, ensuring constant contact with the CPU and PMIC.



Figure 4.1: Isometric view of the Argon THRML 60mm Radiator Cooler. This image shows the overall design of the cooler, including the heatsink fins and the integrated fan, ready for installation.

6. **Connect the Fan:** Connect the 4-pin fan connector from the cooler to the dedicated fan header on the Raspberry Pi 5. Ensure the connector is oriented correctly.



Figure 4.2: Bottom view of the Argon THRML 60mm Radiator Cooler. This image highlights the dual copper heat pipes and the contact surface designed to interface with the Raspberry Pi 5's CPU and PMIC.

Important Note: Some users have reported intermittent Wi-Fi issues potentially related to grounding. If you experience this, consider adding an additional small thermal pad to the Wi-Fi/Bluetooth chip on the Raspberry Pi 5 to ensure proper contact and grounding.

5. OPERATING INSTRUCTIONS

The Argon THRML Radiator Cooler's 60mm PWM fan connects directly to the Raspberry Pi 5 fan header and is designed to integrate with the Raspberry Pi OS for intelligent fan speed adjustment. The fan speed will automatically increase under higher loads to maintain optimal operating temperatures and decrease during lighter use for quieter operation.

- **Automatic Control:** The fan is controlled by the Raspberry Pi OS by default, adjusting its speed based on CPU temperature.
- **Manual Configuration (Advanced):** For advanced users, fan speed curves and thresholds can be configured via the Raspberry Pi OS configuration files (e.g., `/boot/config.txt`). Refer to the official Raspberry Pi documentation for detailed instructions on fan control settings.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your cooler.

- **Cleaning:** Periodically inspect the fan and heatsink fins for dust accumulation. Use a soft brush or compressed air to gently remove dust. Ensure the Raspberry Pi is powered off before cleaning.
- **Thermal Compound:** The thermal compound and pad typically last for several years. If you notice a significant increase in operating temperatures over time, consider reapplying fresh thermal compound and replacing the thermal pad.

7. TROUBLESHOOTING

If you encounter issues with your Argon THRML Radiator Cooler, refer to the following common problems and solutions:

- **Fan Not Spinning:**
 - Ensure the 4-pin fan connector is securely attached to the Raspberry Pi 5's fan header.
 - Verify that the Raspberry Pi 5 is powered on and the operating system is running. The fan may not spin at low temperatures or during idle states due to PWM control.
 - Check Raspberry Pi OS fan control settings (/boot/config.txt) to ensure the fan is enabled and configured correctly.
 - If the fan still does not spin, it may be faulty. Contact support for assistance.
- **Poor Cooling Performance / High Temperatures:**
 - Ensure the cooler is firmly seated on the CPU and PMIC, with good contact. Re-check the spring-loaded push pins.
 - Verify that thermal compound was applied correctly to the CPU and the thermal pad to the PMIC. Reapplication may be necessary if contact was poor.
 - Check for dust accumulation on the heatsink fins and fan, and clean if necessary.
 - Ensure adequate airflow around the Raspberry Pi 5 and cooler.
- **Intermittent Wi-Fi/Bluetooth Issues:**
 - As noted in the installation section, some users have resolved this by adding a small, additional thermal pad to the Wi-Fi/Bluetooth chip on the Raspberry Pi 5 to improve grounding.

8. SPECIFICATIONS

Feature	Detail
Model Number	AR-THRML-60MM-RC-BLCK
Brand	Argon Forty
Compatible Devices	Raspberry Pi 5
Cooling Method	Air, Fan
Material	Aluminum, Copper
Fan Size	60mm (Integrated Blower Fan)
Power Connector Type	4-Pin (PWM)
Voltage	5 Volts (DC)

Feature	Detail
Maximum Rotational Speed	5000 RPM
Air Flow Capacity	18.13 Cubic Feet Per Minute
Noise Level	30 dB
Package Dimensions	3.94 x 3.43 x 2.36 inches
Weight	5.29 ounces

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official Argon Forty website or contact their customer service directly. Keep your proof of purchase for warranty claims.

Argon Forty Official Website: www.argon40.com