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› Argon ONE V5 M.2 Single NVME Case for Raspberry Pi 5 - Instruction Manual

## Argon Forty Argon ONE V5 M.2 Single NVME

# Argon ONE V5 M.2 Single NVME Case for Raspberry Pi 5

Instruction Manual

## 1. INTRODUCTION

The Argon ONE V5 M.2 Single NVME Case is designed to enhance your Raspberry Pi 5 experience by providing robust protection, efficient cooling, and expanded functionality. This aluminum case integrates active and passive cooling solutions, dual full-size HDMI ports, an M.2 NVMe SSD PCIe slot for high-speed storage, DAC audio, and additional USB expansion. This manual provides detailed instructions for assembly, operation, and maintenance of your Argon ONE V5 case.



Image 1.1: Argon ONE V5 M.2 NVMe Case with its components, designed for Raspberry Pi 5.

## 2. WHAT'S IN THE BOX

Please verify that all components are present before proceeding with the installation:

- Argon ONE V5 Raspberry Pi 5 Case
- M.2 NVME Expansion Board
- Instruction Manual (this document)

## 3. SETUP AND INSTALLATION

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Follow these steps carefully to assemble your Argon ONE V5 case with your Raspberry Pi 5 and M.2 NVMe SSD.

### 3.1. Preparation

- Ensure you have your Raspberry Pi 5 board and a compatible M.2 NVMe SSD.
- Gather necessary tools: a small Phillips head screwdriver.
- Work on a clean, static-free surface.

### 3.2. Installing the Raspberry Pi 5

1. Carefully align the Raspberry Pi 5 board with the Argon ONE V5 expansion board. Ensure all pins and connectors are correctly oriented.
2. Gently but firmly press the Raspberry Pi 5 onto the expansion board. Pay particular attention to the USB-C power connector end, as this connection is crucial for power delivery. A secure connection is indicated by the boards sitting flush. *(Note: Improper seating can lead to the Pi not booting.)*
3. Route the fan wiring carefully. It is recommended to route the fan wires along the top section of the cooling fins, rather than underneath the Pi's Ethernet/USB connections, to prevent pinching and ensure proper board seating.

### 3.3. Installing the M.2 NVMe SSD

1. Locate the M.2 NVMe slot on the expansion board.
2. Insert your M.2 NVMe SSD into the slot at an angle, then gently press it down and secure it with the provided screw.
3. Connect the short PCIe ribbon cable from the Raspberry Pi 5 to the M.2 NVMe expansion board. Ensure the ribbon cable is fully seated and not twisted. *(Note: A loose or improperly connected ribbon cable can prevent the NVMe SSD from being detected.)*

### 3.4. Securing the Case

1. Place the assembled Raspberry Pi 5 and expansion board into the bottom half of the Argon ONE V5 case.
2. Align the top cover of the case. When removing or attaching the cover, slide it to the rear slightly before lifting or pressing down to avoid damaging the case recess tabs.
3. Secure the top cover with the provided screws.

### 3.5. Software Setup

After physical assembly, install the Argon ONE script on your Raspberry Pi OS to enable full functionality, including fan control and power button features. Refer to the official Argon Forty documentation or website for the latest script installation instructions.

## 4. OPERATING INSTRUCTIONS

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### 4.1. Powering On/Off

The Argon ONE V5 case features a dedicated ON/OFF button on the front panel. Once the Argon ONE script is installed, this button can be configured for safe shutdown and power cycling.

### 4.2. Connecting Peripherals

Connect your display(s) to the dual full-size HDMI ports. Utilize the front-facing USB 2.0 ports for easy access to peripherals like keyboards, mice, or USB drives. The integrated 3.5mm jack provides both microphone input and headphone output.

# Neat and efficient cable management

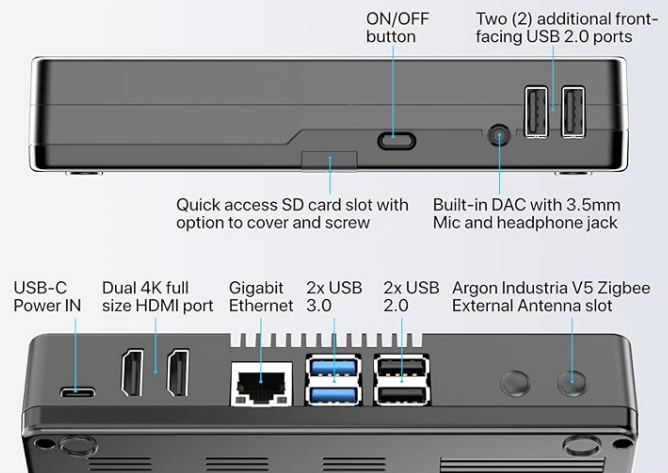


Image 4.1: External ports and neat cable management of the Argon ONE V5 case.

## 5. COOLING FEATURES

The Argon ONE V5 case incorporates both passive and active cooling mechanisms to ensure optimal thermal performance for your Raspberry Pi 5.

### 5.1. Passive Cooling

The case is constructed from casted aluminum, which acts as a large heatsink. This design efficiently dissipates heat from the Raspberry Pi 5's CPU and other components, providing silent, passive cooling.

## Casted aluminum case

Casted aluminum case for passive cooling; used for its high thermal conductivity and efficient heat dissipation to prevent overheating and maintain stable performance in electronic devices

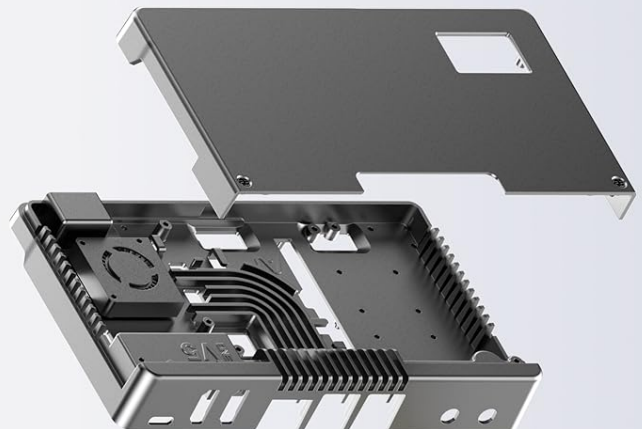


Image 5.1: Exploded view illustrating the casted aluminum case components for passive cooling.

### 5.2. Active Cooling

A built-in 30mm PWM fan provides active cooling, drawing heat away from the heatsink and expelling it through optimized airflow vents. The fan speed can be controlled via software to maintain desired temperatures during intensive workloads.

## Built-in 30mm blower type fan

For active cooling to quickly dissipate hot air from the case internals to outside of the case; same with **THRML 30 Active Cooler**

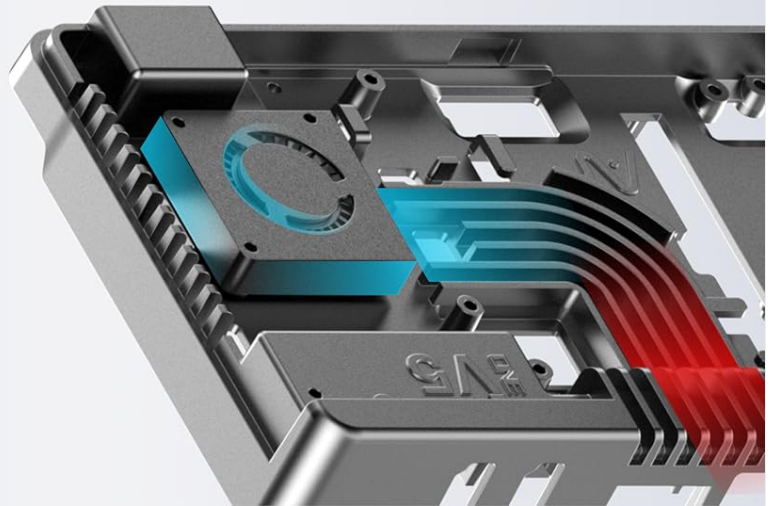


Image 5.2: Internal view highlighting the integrated 30mm PWM fan for active cooling.

### 5.3. Airflow Design

The case features integrated aluminum fins and strategically positioned airflow vents to maximize heat transfer and movement, ensuring efficient cooling performance.

## Optimal airflow vent

Vent design positioned for efficient air intake, heat transfer and movement

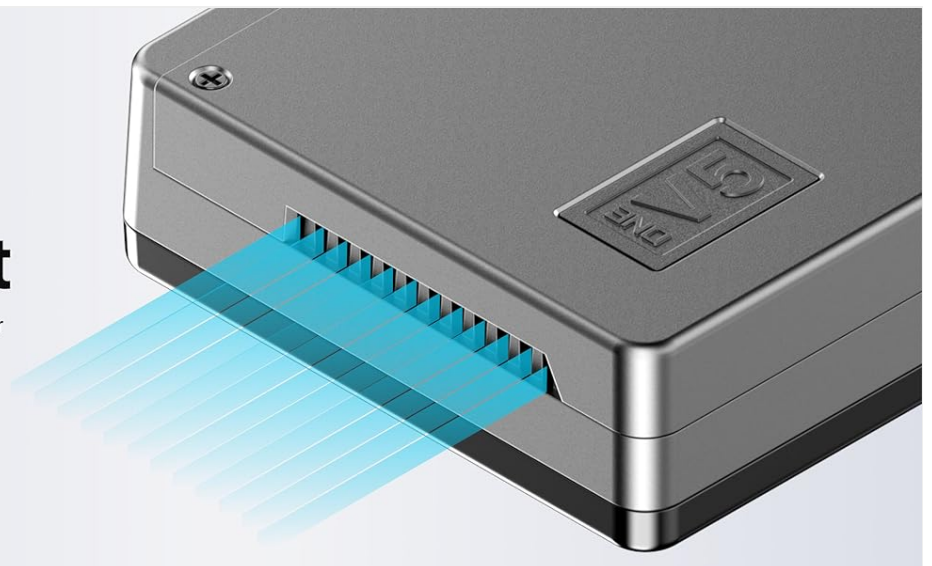


Image 5.3: Diagram illustrating the optimal airflow through the case's ventilation system.

## 6. CONNECTIVITY AND PORTS

The Argon ONE V5 case extends the connectivity of your Raspberry Pi 5 with several convenient ports and internal connectors.

### 6.1. External Ports

- **Dual Full-Size HDMI Ports:** For connecting two displays at high resolutions.
- **Front-Facing USB 2.0 Ports (x2):** Easily accessible for peripherals.
- **Built-in DAC with 3.5mm Mic & Headphone Jacks:** Provides enhanced audio output and microphone input.
- **USB-C Power Input:** For powering the Raspberry Pi 5.
- **Gigabit Ethernet Port:** For wired network connectivity.
- **USB 3.0 Ports (x2):** For high-speed data transfer.

## 6.2. Internal Connectors

The case provides access to various internal connectors for expanded functionality:

- **40-pin GPIO:** Standard Raspberry Pi HAT compatibility.
- **2x 4-lane Camera/Display Connectors:** For camera and display modules.
- **UART Connector:** For serial communication.
- **RTC Battery Connector:** For real-time clock functionality.
- **PCIe Port:** For the M.2 NVMe expansion board.
- **Argon Industria V5 ZigBee Module Connector:** For integrating ZigBee modules.

### Easy access to all ports

Easily accessible and clearly labelled I/O ports

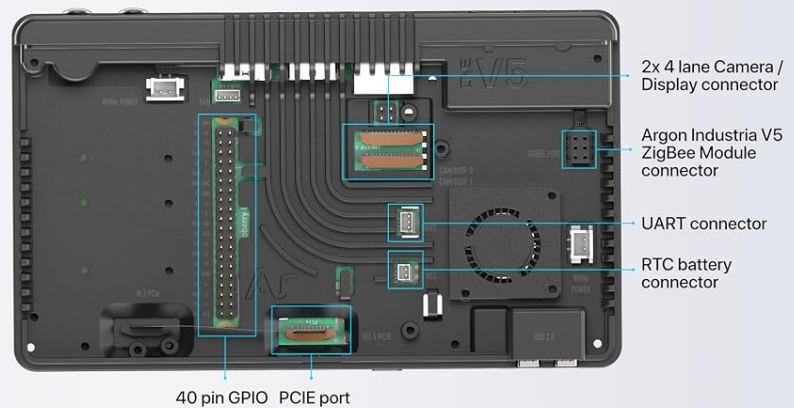


Image 6.1: Labeled internal ports and connectors for easy access and expansion.

## 7. STORAGE EXPANSION

The Argon ONE V5 case features a built-in M.2 NVMe PCIe slot, allowing you to add high-speed storage to your Raspberry Pi 5. This significantly improves data access speeds and expands storage capabilities beyond microSD cards.

### Faster storage

Add speed and capacity with the Argon Industria M.2 NVME Expansion Board; supports up to dual M.2 NVME drives

**\*SOLD SEPARATELY**  
**\*RASPERRY PI 5 & \*ARGON DATATERM M.2 NVME SSD**



Image 7.1: Illustration of M.2 NVMe SSDs installed for faster storage (NVMe SSDs sold separately).

## 8. ADVANCED FEATURES

## 8.1. DAC Audio

The integrated Digital-to-Analog Converter (DAC) with 3.5mm mic and headphone jacks provides superior audio quality compared to the standard Raspberry Pi audio output, ideal for multimedia and communication.

## 8.2. ZigBee Module Integration

An internal USB port is dedicated for ZigBee modules, enabling seamless integration with smart home systems like Home Assistant and other IoT projects.



Image 8.1: Illustration of a Zigbee module connected for smart home integration (module sold separately).

## 8.3. Optional OLED Display

The case supports an optional Argon Industria 1.8" OLED display module (sold separately) for real-time system information, such as CPU temperature and usage, at a glance.



Image 8.2: Close-up of the optional OLED display showing system temperature (display sold separately).

## 8.4. POE+ HAT Support

The Argon ONE V5 case is compatible with Argon Industria POE+ HATs (sold separately), allowing for single-cable power and data transfer over Ethernet.

# Power simplified

Single-cable power and data transfer with \*Argon Industria POE+ Hat support

\*SOLD SEPARATELY

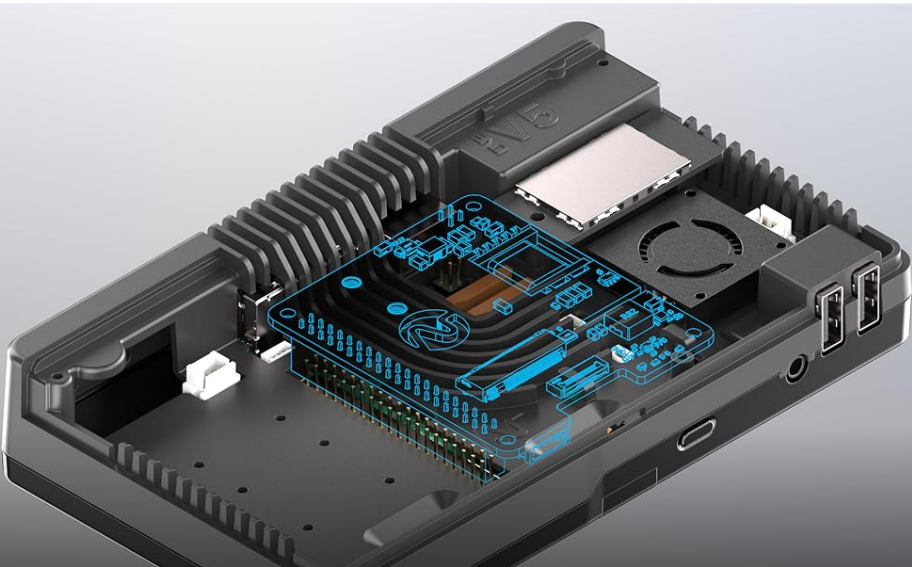


Image 8.3: Diagram illustrating POE+ HAT support for simplified power (HAT sold separately).

## 9. TROUBLESHOOTING

If you encounter issues with your Argon ONE V5 case, refer to the following common problems and solutions:

- **Raspberry Pi 5 does not boot or is unresponsive:**
  - Ensure the Raspberry Pi 5 board is securely seated onto the expansion board. Re-seat it firmly, paying attention to the USB-C power connector side.
  - Verify your power supply is adequate and properly connected.
- **M.2 NVMe SSD is not detected:**
  - Check that the PCIe ribbon cable is correctly and fully inserted at both ends (Raspberry Pi 5 and M.2 expansion board). Try using the second ribbon cable if provided.
  - Ensure the NVMe SSD is properly seated in its slot and secured.
- **Difficulty removing the case cover:**
  - The case cover is designed to slide slightly to the rear before lifting. Avoid pulling straight up to prevent damage to the internal tabs.
- **Fan not operating or incorrect speed:**
  - Ensure the Argon ONE software script is installed and configured correctly.
  - Check the fan cable connection on the expansion board.

## 10. SPECIFICATIONS

| Feature    | Detail       |
|------------|--------------|
| Brand      | Argon Forty  |
| Model Name | Argon ONE V5 |
| Case Type  | Raspberry Pi |
| Material   | Aluminum     |

| Feature                        | Detail                                        |
|--------------------------------|-----------------------------------------------|
| Color                          | Black                                         |
| Cooling Method                 | Air, Heatsink (Active & Passive)              |
| M.2 NVMe Support               | PCIe 2.0/3.0 Slot (Single NVME)               |
| HDMI Ports                     | Dual Full HDMI                                |
| USB Ports                      | 2x USB 3.0, 2x Front-Facing USB 2.0           |
| Audio                          | Built-in DAC with 3.5mm Mic & Headphone Jacks |
| Operating System Compatibility | Linux, Raspberry Pi OS, Ubuntu                |
| Item Weight                    | 13.4 ounces (0.38 Kilograms)                  |
| Package Dimensions             | 6.42 x 3.9 x 0.67 inches                      |

## 11. MAINTENANCE

To ensure the longevity and optimal performance of your Argon ONE V5 case, follow these simple maintenance guidelines:

- **Cleaning:** Periodically clean the exterior of the case with a soft, dry cloth. Avoid abrasive cleaners or solvents. The aluminum surface may be prone to fingerprints, which can be wiped away easily.
- **Dust Removal:** Over time, dust may accumulate in the fan and vents. Use compressed air to gently clear dust from the fan and cooling fins to maintain efficient airflow.
- **Thermal Pads:** The thermal pads facilitate heat transfer. If you disassemble the case, ensure thermal pads are correctly positioned and in good condition. Replace if damaged.

## 12. WARRANTY AND SUPPORT

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

**Website:** [www.argon40.com](#) (Example link, please verify official website)

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Example: How do I reset this device or fix this error?

#### Details

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