

Ace Instruments AI-TAM1

Ace Instruments AI-TAM1 Wall Mounted Temperature Alert Monitor User Manual

Model: AI-TAM1 | Brand: Ace Instruments

1. INTRODUCTION

The Ace Instruments AI-TAM1 is an economical wall-mounted temperature alert monitor designed for critical environments such as server rooms, cold chains, food industries, and pharmaceutical facilities. This device accurately measures and displays temperature, providing immediate alerts for deviations from user-defined low and high limits. Its robust design and clear display ensure reliable monitoring and timely intervention.

2. PRODUCT FEATURES

- **Measuring Parameter:** Temperature
- **Temperature Range:** 0 to 60 °C
- **Accuracy:** $\pm 0.5^{\circ}\text{C} \pm 1$ Count
- **Display:** 4-digit, 0.8-inch height, 7-segment Red LED Display for clear visibility.
- **Sensor:** Wired sensor with a standard cable length of 3 meters, allowing flexible placement.
- **Power Supply:** 24 V.D.C. (Power adapter included).
- **Enclosure:** Wall-mounting type ABS plastic enclosure with a pre-installed wall bracket.
- **Alarm System:** Integrated programmable buzzer alarm (50 Decibels) for low and high limit exceed alerts.
- **Alarm Limits:** Freely programmable from the front keypad.
- **Acknowledgement Key:** Provided to reset the audible alarm, while the alarm LED continues to glow, indicating a limit violation.
- **Dimensions:** 120mm (W) x 80mm (H) x 60mm (D).

3. PACKAGE CONTENTS

- 1 x Ace Instruments AI-TAM1 Temperature Monitor Unit
- 1 x Power Adaptor
- 1 x Wired Temperature Sensor (standard 3-meter cable)
- 1 x Instruction Manual
- 1 x Factory Calibration Certificate

4. SETUP AND INSTALLATION

Follow these steps for proper installation and initial setup of your AI-TAM1 Temperature Monitor:

1. **Mounting the Monitor:** Use the integrated wall bracket on the rear of the device to securely mount the monitor in a desired location. Ensure it is easily visible and accessible.
2. **Connect the Sensor:** Insert the wired temperature sensor into the designated port on the top of the monitor. The standard cable length is 3 meters, but custom lengths are available.
3. **Connect Power:** Plug the provided 24V DC power adapter into the power input port on the top of the monitor, then connect it to a suitable power outlet.
4. **Initial Power-On:** Upon connecting power, the device will power on, and the LED display will show the current temperature reading.



Figure 4.1: Front view of the Ace Instruments AI-TAM1 Temperature Monitor with its wired sensor.



Figure 4.2: Rear view of the Ace Instruments AI-TAM1 Temperature Monitor showing the wall mounting bracket.

Video 4.1: Overview of the AI-TAM1 Temperature Monitor, demonstrating its physical features, connections, and basic operation. This video is provided by the seller, Instrupreneurs.

5. OPERATION

The AI-TAM1 features a user-friendly interface with three front-panel buttons for setting alarm limits and acknowledging alarms.



Figure 5.1: Close-up of the AI-TAM1 display showing temperature reading and control buttons.

5.1 Setting Alarm Limits

The device allows you to program both low and high temperature alarm limits. Refer to the detailed instructions in the included printed manual for specific button sequences to enter programming mode and adjust these limits. The front panel includes 'SET', 'Up Arrow', and 'Down Arrow' buttons for navigation and value adjustment.

5.2 Alarm Acknowledgement

In the event of a temperature deviation exceeding the set limits, the integrated buzzer will sound, and an alarm LED will illuminate. To silence the audible alarm, press the 'ACK' (Acknowledgement) button on the front panel. The alarm LED will continue to glow, indicating that a limit violation has occurred until the temperature returns to within the acceptable range.

6. CONNECTIVITY

The AI-TAM1 offers advanced connectivity options for integration into larger monitoring systems:

- **Analog Output:** The monitor provides a 4-20mA analog output, allowing seamless connection to PLCs (Programmable Logic Controllers) or SCADA (Supervisory Control and Data Acquisition) systems.
- **RS485 Modbus Communication:** For digital communication, the device supports RS485 Modbus, enabling data exchange with compatible control systems.

These provisions allow for remote monitoring and data logging, enhancing the overall control and safety of your monitored environment.

7. SENSOR INFORMATION

The AI-TAM1 utilizes a high-accuracy wired temperature sensor. The standard sensor cable length is 3 meters, providing flexibility for sensor placement within the monitored area while the display unit remains accessible outside (e.g., outside a cold room or data center). Custom cable lengths up to 15 meters can be accommodated based on specific application requirements.

8. APPLICATIONS

The Ace Instruments AI-TAM1 Temperature Monitor is suitable for a wide range of applications requiring precise temperature monitoring and alert capabilities:

- Server Rooms & Data Centers
- UPS & Battery Rooms
- Cold Storages & Cold Chains
- Food Industries
- Pharmaceutical Industries
- Bio-Medical Facilities
- Logistics & Warehouses
- Hospitals
- Airports
- Machinery Rooms



Figure 8.1: Visual representation of diverse applications for the AI-TAM1 Temperature Monitor.

9. SPECIFICATIONS

Feature	Specification
Model Number	AI-TAM1
Brand	Ace Instruments
Measuring Parameter	Temperature
Temperature Range	0 to 60 °C
Accuracy	$\pm 0.5^{\circ}\text{C} \pm 1$ Count

Feature	Specification
Display	4-digit, 0.8-inch height, 7-segment Red LED
Sensor Cable Length	Standard 3 meters (customizable up to 15 meters)
Power Supply	24 V.D.C.
Enclosure Material	ABS Plastic
Mounting Type	Wall Mounting with Bracket
Buzzer Output	50 Decibels (extendable up to 100 meters)
Alarm Limits	Programmable Low & High
Output Options	4-20mA Analog, RS485 Modbus (optional)
Dimensions	120mm (W) x 80mm (H) x 60mm (D)

10. MAINTENANCE

- To ensure the longevity and accurate performance of your AI-TAM1 Temperature Monitor, regular maintenance is recommended:
- **Cleaning:** Periodically wipe the display and enclosure with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
 - **Sensor Inspection:** Regularly check the sensor and its cable for any signs of damage, corrosion, or wear. Ensure the sensor is free from obstructions that might affect its readings.
 - **Calibration:** For critical applications, periodic calibration of the temperature sensor and monitor is advised to maintain accuracy. Refer to the calibration certificate for recommended intervals.
 - **Power Supply:** Ensure the power adapter and cable are in good condition and securely connected.

11. TROUBLESHOOTING

- If you encounter any issues with your AI-TAM1 Temperature Monitor, consider the following common troubleshooting steps:
- **No Display/Power:** Check if the power adapter is correctly plugged into both the monitor and the power outlet. Verify the power outlet is functional.
 - **Incorrect Temperature Reading:** Ensure the sensor is properly connected to the monitor. Check the sensor cable for any damage. Verify that the sensor is placed in the correct environment for measurement.
 - **Alarm Not Triggering:** Confirm that the low and high alarm limits are set correctly according to your requirements. Check if the buzzer is enabled and not manually silenced.
 - **Alarm LED On Continuously:** This indicates a temperature violation. Press the 'ACK' button to silence the audible alarm. The LED will remain on until the temperature returns to within the set limits.

For persistent issues or technical support, please contact Ace Instruments customer service.

12. WARRANTY AND SUPPORT

The Ace Instruments AI-TAM1 Temperature Monitor comes with a standard manufacturer's warranty. Please refer to the warranty card included in your package for specific terms and conditions. For technical assistance, troubleshooting, or to inquire about extended warranty options, please contact Ace Instruments customer support through their official website or the contact information provided in your product documentation.

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

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

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question