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AIRAIN TECH 6.5-inch monitor

AIRAIN TECH 10-in-1 Wireless Weather Station User Manual

Model: 6.5-inch monitor

1. Introduction and Overview

The AIRAIN TECH 10-in-1 Wireless Weather Station provides comprehensive real-time weather data for both indoor and outdoor environments. This system includes an outdoor sensor that measures temperature, humidity, rainfall, wind speed, and wind direction, transmitting this data wirelessly to an indoor display console. The console also features an atomic clock, barometer, and weather forecast capabilities, all presented on a clear, adjustable 6.5-inch color LCD screen. This manual will guide you through the setup, operation, and maintenance of your weather station.



Image 1.1: The AIRAIN TECH 10-in-1 Wireless Weather Station, showing the indoor display console and the integrated outdoor sensor unit.

2. Package Contents

Before beginning installation, please verify that all components are present in your package:

- Display Console ×1

- Outdoor Sensor ×1
- User Manual ×1
- Power Adapter ×1
- Feet ×1 (for display console)
- Mounting Bracket Backplate ×1
- Mounting Pole ×1
- Nuts (M3/M5) / Bolts (M3/M5)
- Screws
- 3 AAA batteries (included)



Image 2.1: All components included in the package, with approximate dimensions for the display console and outdoor sensor.

3. Product Features

The AIRAIN TECH 10-in-1 Wireless Weather Station offers a range of features for comprehensive weather monitoring:

- **High-Precision Swiss Temperature and Humidity Sensor:** Provides real-time temperature (-40°F to 140°F, accuracy ±2°F/1°C) and humidity (10% to 99%, accuracy ±5%). It also analyzes wind chill index and outdoor dew point data, useful for planning outdoor activities.
- **Comprehensive Weather Forecast:** The indoor display console provides a localized weather forecast based on barometric pressure changes, indicating sunny, partly cloudy, cloudy, or rainy conditions.
- **Wireless Data Transmission:** The outdoor sensor wirelessly transmits data up to 328 feet (100 meters) to the indoor display console, ensuring flexible placement without complex wiring.
- **Environmental Monitoring:** Utilizes professional-grade rain gauges, anemometers, and thermohygrometers to collect reliable hydrometeorological data for weather monitoring and educational purposes.
- **Atomic Clock Function:** The console automatically attempts to receive an RCC signal for time and date synchronization at 2:00, 8:00, 14:00, and 20:00 daily, ensuring accuracy.
- **Adjustable Color LCD Screen:** Features a 6.5-inch large color LCD screen with 3-level backlight brightness adjustment for clear readability in various lighting conditions.



Image 3.1: Visual representation of the station's core functions: temperature/humidity, barometric pressure, time, and weather forecasting.



Image 3.2: The weather forecast display showing various weather conditions.

4. Setup and Installation

The weather station is designed for easy installation. Follow these steps to set up your device:

1. **Unpack Components:** Carefully remove all items from the packaging and ensure all parts listed in Section 2 are present.
2. **Install Batteries in Outdoor Sensor:** Open the battery compartment on the outdoor sensor and insert the 3 AAA batteries (included), observing correct polarity. The outdoor sensor also features a solar panel for supplementary power.
3. **Power On Display Console:** Connect the power adapter to the display console and plug it into an electrical outlet. The console will power on and begin searching for the outdoor sensor.
4. **Mount Outdoor Sensor:** Choose a suitable location for the outdoor sensor. It should be in an open area, away from obstructions, to ensure accurate readings for wind, rain, and temperature. The adjustable bracket allows for various mounting options (on a pole, fence, or wall). Ensure the solar panel faces south for optimal charging.

5. **Synchronize Data:** The outdoor sensor and indoor display console should automatically connect and synchronize data within a few minutes. If not, refer to the troubleshooting section.



Image 4.1: Power supply options for the display console (adapter) and outdoor sensor (solar panel and batteries).



Image 4.2: Illustrations of different mounting configurations for the outdoor sensor, including top and side mounts on various structures, and showing the 328 feet transmission range.

5. Operation

Once set up, your weather station will continuously monitor and display weather data. Here's how to interact with the display

console:

5.1 Display Console Overview

The 6.5-inch color LCD screen provides a clear overview of all measured parameters. Key indicators include:

- **Date and Time:** Synchronized via WWVB radio signal.
- **Wind Direction and Speed:** Current gust and average wind speed in m/s.
- **Weather Trend Indication:** Icons for sunny, cloudy, rainy.
- **Indoor/Outdoor Temperature and Humidity:** Real-time readings.
- **Barometric Pressure:** Absolute and relative pressure readings.
- **Rainfall:** 24-hour rainfall in inches.
- **Moon Phase:** Current moon phase display.

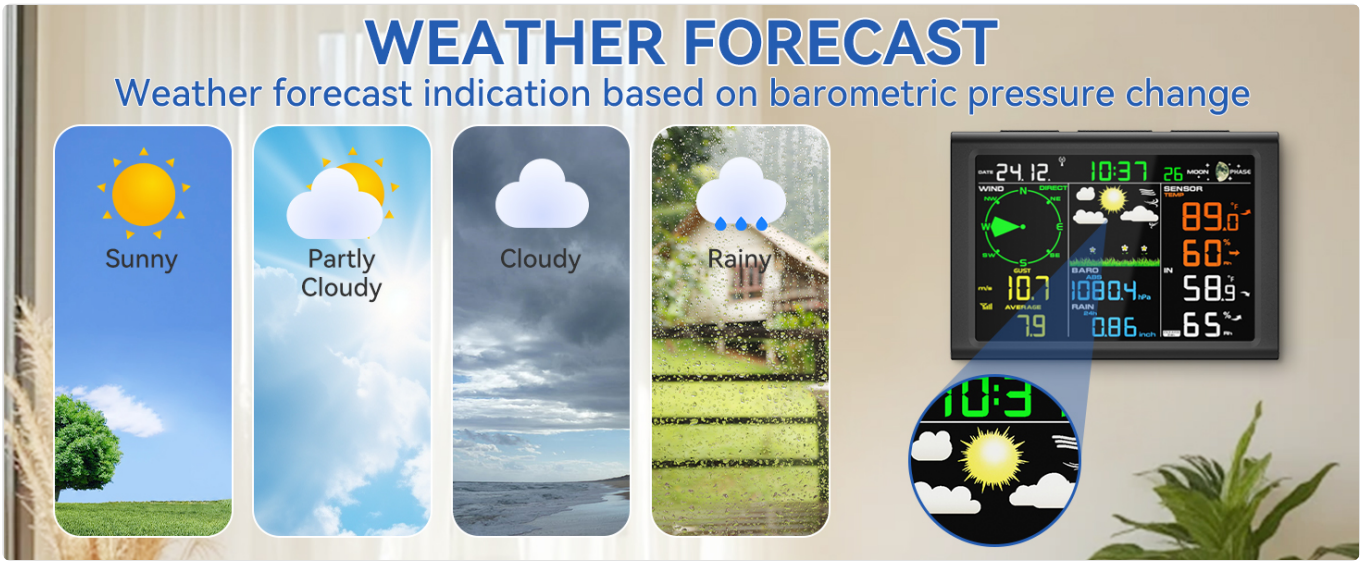


Image 5.1: Detailed view of the display console with labels for each data point and control button.

5.2 Atomic Clock Synchronization (WWVB)

The console automatically attempts to receive the WWVB radio signal for time and date synchronization at 2:00, 8:00, 14:00, and 20:00 daily. A WWVB icon on the display indicates successful reception. This ensures your weather station always displays the precise time.



Image 5.2: The WWVB icon on the display console, indicating active atomic clock synchronization.

5.3 Backlight Adjustment

Press the **[SNOOZE/LIGHT]** button to cycle through three brightness levels (100%, 60%, 30%) or to turn the backlight off. This allows you to adjust the display's visibility according to ambient light conditions.

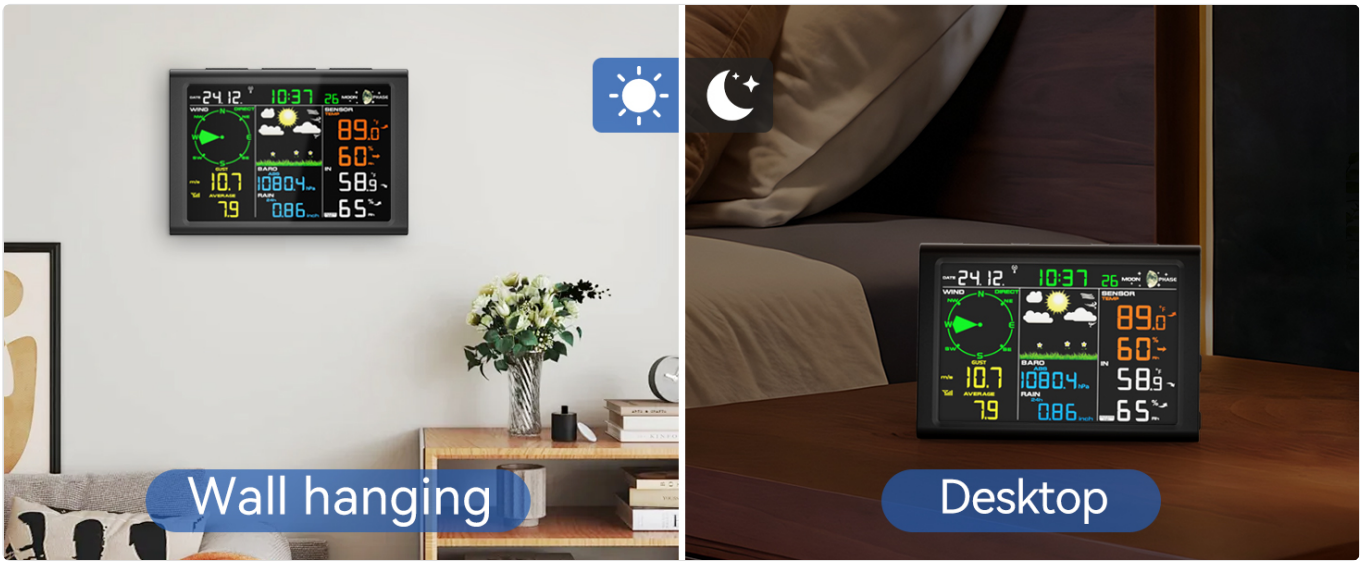


Image 5.3: The display console illustrating the three adjustable backlight brightness settings.

6. Maintenance

Proper maintenance ensures the longevity and accuracy of your weather station:

- **Cleaning:** Periodically wipe the display console with a soft, dry cloth. For the outdoor sensor, gently clean the rainwater collector, wind cups, and wind vane to prevent debris buildup that could affect readings. Avoid using abrasive cleaners or solvents.
- **Battery Replacement:** Replace the batteries in the outdoor sensor annually or when the low battery indicator appears on the display console. Ensure to use fresh, high-quality batteries.
- **Sensor Placement Check:** Regularly inspect the outdoor sensor's mounting to ensure it remains secure and unobstructed. Verify that the solar panel is clean and facing south for optimal performance.

Image 6.1: Diagram of the outdoor sensor, highlighting components that may require periodic cleaning or inspection.

7. Troubleshooting

If you encounter issues with your weather station, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No outdoor data displayed.	Outdoor sensor not connected or out of range. Low batteries in outdoor sensor.	Ensure outdoor sensor is within 328ft (100m) of the display console. Replace outdoor sensor batteries. Press the reset button on the outdoor sensor and re-sync.
Inaccurate temperature/humidity readings.	Sensor exposed to direct sunlight or heat sources. Obstructions around the sensor.	Relocate the outdoor sensor to a shaded area, away from direct heat or reflective surfaces. Ensure proper airflow around the sensor.
Wind speed/direction not registering.	Wind cups or vane obstructed. Sensor not properly aligned.	Clear any debris from the wind cups and vane. Ensure the sensor is mounted securely and the wind vane can rotate freely. Verify the solar panel faces south.

Problem	Possible Cause	Solution
Rainfall data is incorrect.	Rain collector blocked by debris.	Clean the rainwater collector funnel to ensure water can flow freely.
Time is incorrect.	WWVB signal not received.	Ensure the display console is placed in an area with good reception, away from electronic interference. The console attempts to synchronize several times a day.

8. Specifications

Feature	Detail
Brand	AIRAIN TECH
Model Number	6.5-inch monitor
Recommended Uses	Garden, Home
Specific Uses	Temperature, humidity, air pressure, wind speed, wind direction, rainfall, moon phase, calendar
Power Source	Solar Powered (Outdoor Sensor), Power Adapter (Display Console)
Special Feature	Wireless
Material	Plastic
Connectivity Technology	Radio Frequency
Number of Batteries	3 AAA batteries required (included for outdoor sensor)
Color	Black (Display Console), White (Outdoor Sensor)
Temperature Accuracy	±1°C / ±2°F
Display Type	LCD
Item Weight	3.83 pounds (1.74 Kilograms)
Wireless Transmission Range	Up to 328 feet (100 meters) in open areas

9. Warranty and Support

AIRAIN TECH is committed to providing high-quality products and customer service. Your weather station comes with a 2-year warranty.

9.1 After-Sales Service

Our dedicated after-sales service center is located in Florida, USA. For any technical issues or support inquiries, please contact us:

Phone: 904-652-2795 (Monday to Friday, 9:00 a.m. to 6:00 p.m. Eastern Time)

Email: Refer to the email address provided on the front of the product packaging. We aim to reply within 24 hours on weekdays.



Image 9.1: AIRAIN TECH customer service team ready to assist with product inquiries.

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