

TR9399-WiFi
Battery Powered, Wi-Fi Communicating
Temperature & Dew Point

With Webpage Accessible Data or Easy Integration With BAS Systems

Key Features

- Ideal for permanent (wall mount), temporary or walk-through monitoring.
- Battery provides 3-year operating life on 2 AA batteries. Also can use 5-24VAC/VDC line power.
- On-board data logger can log up to 3,072 points.
- Up to 200 WiFi transmitters can easily be integrated into wired BACnet™ IP, Modbus or SNMP networks using an inexpensive 3rd party gateway.
- Data easily routed to any Internet device or to an optional cloud database service (SQL database compatible) to allow data to be viewed on any computer, tablet or smartphone.
- Configurable alarm function with audible, visual, email and text alarm indication.
- Easily configured via a USB plug-in PC interface.
- User adjustable intervals for logging and transmitting.



The TR9399-WiFi is a battery-operated temperature and dew point sensor with a microprocessor controlled IEEE 802.11b/g radio Wi-Fi transceiver. The transmitter has an on-board clock that allows it to spend most of the time in a low power quiescent state when in battery operation mode. Temperature and humidity data is subjected to a CRC-16 error check and transmitted in a very short data packet that results in a very short transmitter on-time and very low energy use that makes it ideal for long-term battery operation. The TR9399 will also communicate continuously when line powered (5-24 VDC/VAC).

Upon power up the sensor scans all available WiFi network channels (typically 1, 6, and 11) and allows the user to log into the WiFi network to be used. The TR9399 supports all major WiFi security and encryption protocols.

The TR9399 Wi-Fi temperature and dew point transmitter also has onboard memory, allowing it to function as a data logger. The sensor has programmable log rates ranging from 2 to 60 minutes. The sensor can store up to 3,072 data and/or event records.

The TR9399 also offers an on-board audible and visual alarm, and can continuously send data to a website that records all reading for future reference. Email and text messages can be automatically generated if user established alarm levels are exceeded.

AirTest also offers battery powered WiFi sensors for measuring CO₂ and temperature (TR9299-WiFi) for DCV ventilation control, as well as for measuring temperature inside coolers or freezers (TR7499-WiFi) to monitor for conditions that may lead to food spoilage.

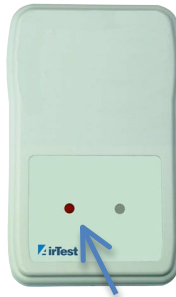
Wi-Fi Details

- 12dBm 2.4 GHz 802.11b/g Wi-Fi module
- Communicates with Industry Standard Access Points
- Supports WEP128, WPA-PSK (TKIP), and WPA2-PSK (AES)
- Small data packets (~75 bytes)
- Supports DHCP or Static IP
- Channel agility
- FCC, CE, and IC Class B compliant

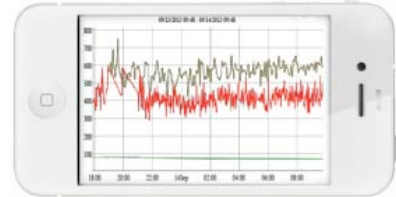
TR9399-WiFi: One Product... Four Applications

1. LEED Occupant Comfort Points (Credit IEQ 2.3)

Green Building certification credits are available for monitoring temperature and dew point measurements every 15 minutes. This must also be combined with periodic air speed and radiant temperature monitoring. The battery powered TR9399-WiFi does not require wiring and can easily be installed for any retrofit application. This device can provide two ways to monitor occupant comfort...



1. *Blinking LED & beep at high temp & RH levels (silence & disable capable)*



2. *When WiFi connected, levels are logged to an AirTest-provided web page that allows for graphing and email alerts.*

2. Walk Through IAQ Surveys

Temperature and dew point levels can provide important information on comfort and potential for condensation and mold. The battery powered TR9399-WiFi can be carried through the space and will store up to 3,072 time-stamped RH and temperature readings (with calculated dew point). Once the TR9399-WiFi comes within range of a known WiFi network all logged data will be uploaded to an AirTest provided webpage for viewing, graphing and download.



3. Short Term Monitoring (1-7 days)

Monitoring of temperature, RH and dew point in a space over one to seven days can identify if the space meets current comfort standards and can identify conditions that may lead to condensation or mold growth.

The TR9399-WiFi can actively transfer data to an AirTest-hosted website via a local WiFi network or a personal cellular WiFi device (e.g. Myfi). If WiFi is not available, the internal data-logger will store data until it connects with its base network.



4. Integration With Building Control Systems

WiFi is the most widespread, dependable, economical and well-understood wireless communication technology available today for inside buildings.

The TR9399-Wifi can tap into any existing networks using the latest in encryption technology. Economical third party gateways are now available that can tap into a WiFi network and deliver a wired BACnet or Modbus or SNMP connection. Building controllers with Internet communication capability can easily utilize the internet based data from the TR9399-WiFi.

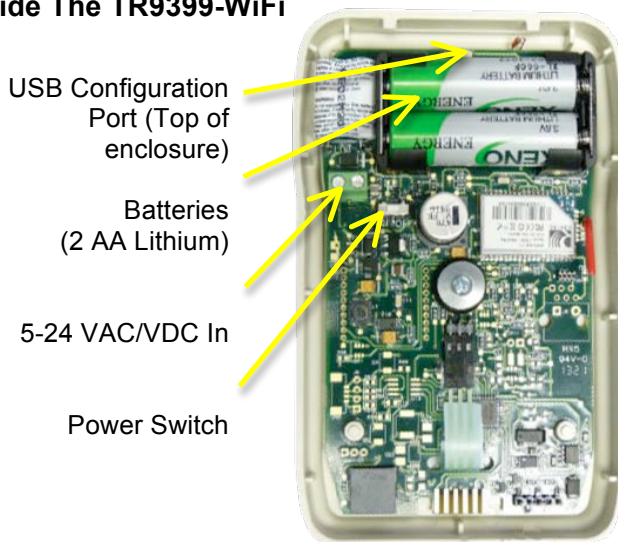


Web Logging Service

AirTest also provides a Web Logging (WL) option with all WiFi communicating products that allows the user to automatically log sensor information to a cloud-based database for a nominal monthly fee. This is ideal for applications where an ongoing, tamperproof record of readings is important. The webpage interface also allows for automatic report and email and text alarm generation.



Inside The TR9399-WiFi



A Wide Variety Of Connection Options

The TR9399-WiFi offers a number of ways to stream the data from the sensor to a cloud database or a building control device or network.

1. For monitoring applications there is the AirTest Cloud server that can store and graph WiFi transmitter data on the web.
2. For control applications the data from the sensor can be streamed to other Internet protocol capable controllers for a building (Driver needed to translate WiFi UDP data packets).
3. To link the WiFi signal to a wired BACnet IP, Modbus or SNMP network the inexpensive [Babble Buster Gateway \(BB2-7010-06\)](#) from Control Solutions Inc. provides an ideal and easy-to-implement integration tool for up to 200 AirTest WiFi transmitters.

Specifications TR9399-WiFi


Sensors

RH & T Type: Sensirion Model SHT25
Temperature Range: -40 to 185°F (-40 to 125°C)
Temperature Accuracy: ± 0.36°F (0.2°C) @ 77°F
Dew Point Accuracy: ± 0.8°F Td (± 0.5°C Td)
Sample Rate: 15 seconds, (Adjustable)

Power

Battery: two (2) 3.6 VDC Lithium Thionyl Chloride
Battery Life: up to 157,680 transmissions
External Power (if desired): 5-24v DC or AC. 1A peak current, 20mA average current

Wi-Fi

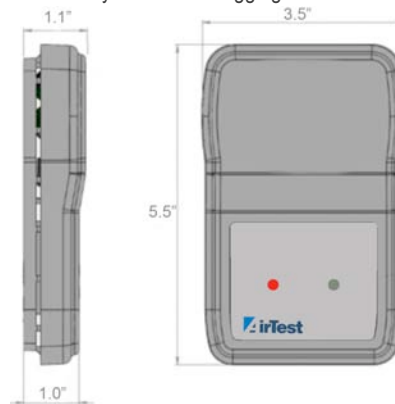
Transmission rate: User programmable
Log rate: User programmable
Broadcast: 12dBm 2.4 GHz 802.11b/g Wi-Fi module
Compatibility: Communicates with Industry Standard Access Points
Encryption: Supports WEP128, WPA-PSK (TKIP), and WPA2-PSK (AES)
Communication Packets: Small data packets (~75 bytes), Supports DHCP or Static IP, Channel agility
Data Packet Spec Link: [TR9299UDPSpec](#)
Certification: FCC, CE, and IC Class B compliant
Weight: 5 oz
MADE IN THE USA 
 This device contains transmitter module
 FCC ID: T9J-RN171 IC: 6514A-RN171
 US Patent: 6721546 B1

Models

TR9399-WiFi Temperature and Dew Point Transmitter
 TR9389-WiFi Temperature and RH Transmitter

Optional Web Logging Packages (Add to model no)

WL1: One year of web logging
 WL2: Two years of web logging
 WL3: Three years of web logging



Other WiFi Products available from AirTest:

TR9299 – CO₂ and Temperature
 TR9499 – Freezer/Cooler Temp Monitoring
 Zigbee Versions also available (Xbee Pro)

3/11/14

AirTest™ Technologies Inc. specializes in the application of cost effective, state-of-the-art air monitoring technology to ensure the comfort, security, health and energy efficiency of buildings.

