

Indoor PM2.5 Air Quality Sensor

Model: WH43

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1. Introduction

Thanks for your purchasing of the WH43 PM2.5 Air Quality Sensor. To ensure the best product performance, please read this manual and retain it for future reference.

2. Parts List

One Air Quality Sensor(Wireless PM2.5 Sensor)
One USB Cable
User Manual

3. Features

PM2.5 Sensor

- Measures indoor PM2.5 concentration every 60 seconds when powered with AC adaptor or detecting every 10 minutes when powered with batteries.
- USB connection for indoor use only
- Calibration function available when paired with GW1000/HP2551/HP3500/HP3501
- Long wireless range, up to 300 feet (100 meters) in open areas

When paired with a WH0290 console:

- Console will synchronize with this sensor and the received data can be displayed on the console.
- AQI index
- Calibration function is not available with this console display. Max one sensor can be supported.

When paired with a GW1000 Wi-Fi Gateway:

- Monitor live sensor data on the Live Data page of the WS View app (requires the gateway and your phone using the same Wi-Fi network)
- Displays current PM2.5 concentration/AQI and

24H AQI and air quality level index on the Live Data page of the WS View app

- Up to 4 channels supported.
- Calibration function available

When paired with a Weather Station Console (HP2551/HP3500/HP3501):

- View PM2.5 concentration data in real-time on the Display
- Up to 4 channels supported. Channel names can be edited on the Display (for HP2551 only).
- Calibration function available.

When uploaded to Ecowitt Weather Server:

- View current sensor data & history records & graph on the website
- Set and receive email alerts from the server
- Channel names can be edited on the website
- Remote monitoring with smart phone, laptop, or computer by visiting the website

Note: The WH41 and WH43 will be recognized as the same sensor type by the software. If you purchased both, they will share the four channels together and the total quantity of the two sensors could not exceed four.

4. Sensor Set Up

1. Remove the battery door on the base of the air quality sensor as shown in Figure 1

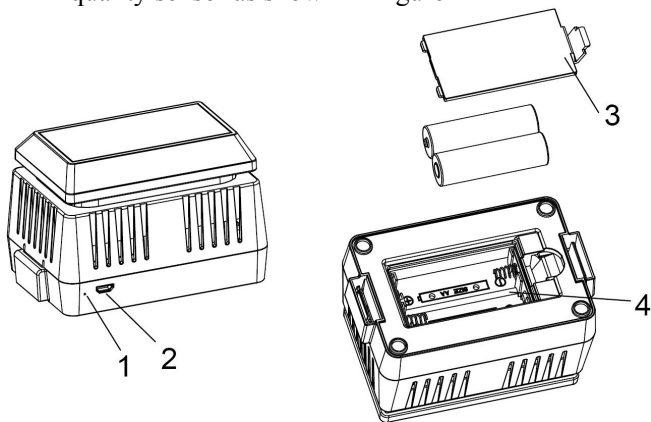


Figure 1

No	Description	No	Description
1	Red LED Indicator (RF transmission)	3	Battery Compartment Cover
2	AC Adapter USB Power Port	4	Battery Compartment

2. Insert two AA batteries and close the battery door.

Note: The batteries (not included) are mainly for backup purpose.

3. Connect the USB cable between the sensor and an AC adapter(not included).

Note: After inserting the batteries or connecting AC power, the sensor LED indicator will light for four seconds, and then flash once per 1 minute thereafter (10 minutes if only powered by batteries). Each time it flashes, the sensor is transmitting data.

5. Sensor Installation

Before install the sensor into its permanent location, you may go to Section 6 to configure with the gateway first. Once the sensor has been confirmed working correctly, then you can go back here.

Place the sensor on a horizontally surface. Note that the vents must be clear of any obstructions, and we recommend placement away from other electronic devices to prevent interference. Do not place on a metal table to prevent RF signal loss.

Wireless communication is susceptible to interference, distance, walls and metal barriers. We recommend the following best practices for trouble free wireless communication.

1. Electro-Magnetic Interference (EMI). Keep the console several feet away from computer monitors and TVs.

2. Radio Frequency Interference (RFI). If you have other devices using the same RF frequency and communication is intermittent, try turning off these other devices for troubleshooting purposes. You may

need to relocate the transmitters or receivers to avoid intermittent communication.

3. Line of Sight Rating. This device is rated at 300feet line of sight (no interference, barriers or walls) but typically you will get 100feet maximum under most real-world installations, which include passing through barriers or walls.

4. Metal Barriers. Radio frequency will not pass through metal barriers such as aluminum siding. If you have metal siding, align the remote and console through a window to get a clear line of sight.

6. Wi-Fi Configure with gateway

This PM2.5 sensor doesn't has a display function and you need to use our WS View App to view the data on your mobile application after pairing this device with our GW1000 Wi-Fi Gateway(sold separately).

6.1 Pair with Gateway

If GW1000 has been in operation, and you have never had any WH41 PM2.5 sensor setup before, just power up the sensor and GW1000 will pick PM2.5 data automatically.

If a PM2.5 sensor has been hooked on GW1000 before, and you have a new PM2.5 sensor to replace the old one, unplug GW1000 from USB socket and power up again, then the new sensor will be learned and old sensor will be erased.

Note: The gateway can support up to 4 PM2.5 air quality sensors(with GW100 Firmware V1.4.6 or above). Each new sensor will be recognized as a new channel according to the Power-on sequence. You may attach a label of the channel on each sensor for distinction.


6.2 Wi-Fi Connection for the Gateway

For this part, please refer to the manual of the GW1000 Wi-Fi gateway.

Any question, please contact the customer service.

7. View Online Data on WS View

When the Wi-Fi configuration is done, you can view the live data of your PM2.5 sensor on the WS View application.

Device List		Live Data		More	
GW1000B-WIFI71A0					
Indoor Temperature			Indoor Humidity		
26.5 °C			48 %		
Absolute Pressure			Relative Pressure		
1015.3 hPa			1015.3 hPa		
CH1 PM2.5		Real-time AQI		24H AQI	
28.0 ug/m ³		84 Moderate		89 Moderate 	
GW1000B_V1.5.7					

Note:

The PM2.5 data can be only viewed on the Live Data interface since it doesn't support uploads to weather underground.

If you choose to upload the data to our weather server: <https://www.ecowitt.net>, you can view the live data/history graph and download the records on the website. You can add a shortcut of the website on the home screen of your phone for quick access.

8. Appendix

About the Air Quality Levels

AQI	Air Pollution Level	PM2.5 Concentration ug/m3	Health Implications	Cautionary Statement (for PM2.5)
0 - 50	Good	0.0-12.0	Air quality is considered satisfactory, and air pollution poses little or no risk	None
51 - 100	Moderate	12.1-35.4	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
101-150	Poor	35.5-55.4	Members of sensitive groups may experience health effects. The general public is not likely to be affected.	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.

151-200	Unhealthy	55.5-150.4	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects	Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion
201-300	Severe	150.5-250.4	Health warnings of emergency conditions. The entire population is more likely to be affected.	Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
300+	Hazardous	250.5+	Health alert: everyone may experience more serious health effects	Everyone should avoid all outdoor exertion

9. Specification

Measurement	Range	Accuracy	Resolution
PM 2.5	0~999ug/m3	>100ug/m3, ±15% <100ug/m3, ±15ug/m3 (at 25°C ±5°C)	1ug/m3

Transmission distance in open field: 100m(300 feet)

Frequency: 915/868/433Mhz(optional)

Sensor reporting interval: 1 minutes (10 minutes when only powered by batteries)

Power consumption

- PM2.5 sensor: AC power (5V 1A) - Not included
2 x AA 1.5V Batteries for back up - Not included

10. Warranty Information

We disclaim any responsibility for any technical error or printing error, or the consequences thereof.

All trademarks and patents are recognized.

We provide a 1-year limited warranty on this product against manufacturing defects, or defects in materials and workmanship.

This limited warranty begins on the original date of purchase, is valid only on products purchased, and only to the original purchaser of this product. To receive warranty service, the purchaser must contact us for problem determination and service procedures.

This limited warranty covers only actual defects within the product itself and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, or claims based on misrepresentation by the seller, or performance variations resulting from installation-related circumstances.