



WEHS01-1 Series



- Wireless range of 1,000+ feet through 12-14 walls
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life (10+ years on AA batteries)
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Onboard data memory / storage (up to 512 readings per sensor) 10 min heartbeats = 3.5 days 2 hour heartbeats = 42 days
- Over-the-air updates (future proof)

DESCRIPTION

The WEHS01-1 is a wireless humidity sensor manufactured for simple measurements on a variety of applications. This system can use Phoenix Sensors various humidity sensors to supply the appropriate solution for industrial, consumer, and commercial applications.

Simply setup the Phoenix Sensors back-end Online and Mobile application from our website and connect to the device. The sensor can measure the relative humidity in a given area. The battery version will last up to 10 years on average. Please contact us for Custom design availability.

The Mobile Software enables the user to store data to the cloud for evaluate later. The output of this information will be in a data sheet or graph. You can also export your readings onto your device.

APPLICATIONS

- Greenhouse Temp/Humidity Monitoring
- Agricultural Environmental Monitoring
- Art Gallery/Museum Environmental Monitoring
- Humidor Monitoring
- General Weather and Environmental Monitoring
- And many more...

Maximum Environmental Ratings

Operating Temperature -18°C to 50 °C (alkaline)
 -40°C to 80°C (lithium) Optimal Battery Temperature..... +10 °C to +45 °C

Greenhouses – Temp/Humidity Monitoring

The WEHS01-1 is a wireless humidity sensor used in a variety of applications, such as Greenhouses, giving a reading of the humidity or temperature of the enclosed area. It is crucial in this application; without the right temperature, nothing will grow.



Museums – Temperature Monitoring



The WEHS01-1 is a wireless humidity sensor that can get measurements up to 1000 feet away. It is accurate and robust enough for Art Galleries/Museum applications; if you need to monitor the temperature or humidity inside a large enclosed area, this sensor will meet your wants and needs.

Humidor Monitoring

The WEHS01-1 can measure the temperature and humidity of not only large areas, but small ones too, so it is ideal for this application. For troubleshooting, the WEHS01-1 offers accurate remote humidity and temperature measurement of the small enclosed area. The battery powered solution can last up to 10 years.



Agricultural Environments – Humidity Monitoring



The WEHS01-1 is very efficient in agricultural environments as well. It would be perfect to monitor the humidity in a large area such as a field. Distance shouldn't be a problem, and the response time for this sensor is 8 seconds on average.

WEHS01-1 Operational Characteristics

900 MHz product; FCC ID: ZTL- G2SC1 and IC: 9794A-G2SC1. 868 and 433 MHz product tested and found to comply with: EN 300 220-2 V3.1.1 (2017-02), EN300220-2 V3.1.1 (2017-02) and EN 60950.

PARAMETER	UNIT	INFORMATION	NOTE
Supply Voltage	V	2.0 - 3.8 VDC (3.0 - 3.8 VDC Using Power Supply)	Cannot withstand negative voltage
Current Consumption	uA	0.2 uA (Sleep Mode) 0.7 uA (RTC Sleep) 570 uA (MCU Idle) 2.5 mA (MCU Active) 5.5 mA (Radio RX Mode) 22.6 mA (Radio TX Mode)	
Security		Encrypt-RF™ (256-bit key exchange and AES-128 CTR)	
Wireless Range	Feet	1000+ feet	
Integrated Memory		Up to 512 sensor messages	
RH Response Time	Seconds	8 sec (tau 63%)	
RH Operating Range		0 – 100% RH	
Accuracy		± 3% under normal conditions (10% - 90% RH)	
Operating Temperature Range (Circuitry/Batteries)	Celsius	-18°C to 50°C (0°F to 122°F) using alkaline -40°C to 80°C (-40°F to 176°F) using lithium	Temps above 100°C can cause board to lose memory
Optimal Temperature Range AA Battery)	Celsius	+10°C to +45°C (+50°F to +113°F)	Temps above 100°C can cause board to lose memory

Application Information

Temperature

It is important you don't use this sensor outside of the normal temperature range. Doing so could cause the sensor to eventually fail. It is ideal to keep the temperature of the batteries anywhere from 10°C to 45 °C. The sensor itself works the most stable from -30 °C to 100 °C. This is a large temperature range and will make sure it fits your needs.

Accuracy

The readings from this sensor are accurate ±3% under normal readings. This makes sure your data is accurate and will stay accurate in most conditions. Correct data is crucial.

Range

This humidity sensor can reach a connection of 1000+ feet. The connection can also go through approximately 12-14 walls. This ensures that this sensor will be a solid solution to most applications.

Media

While it is not water-proof, this should not be an issue due to the fact that most applications are measuring the humidity or temperature indoors. Making this sensor perfect for greenhouse monitoring, humidior monitoring, the list could go on.

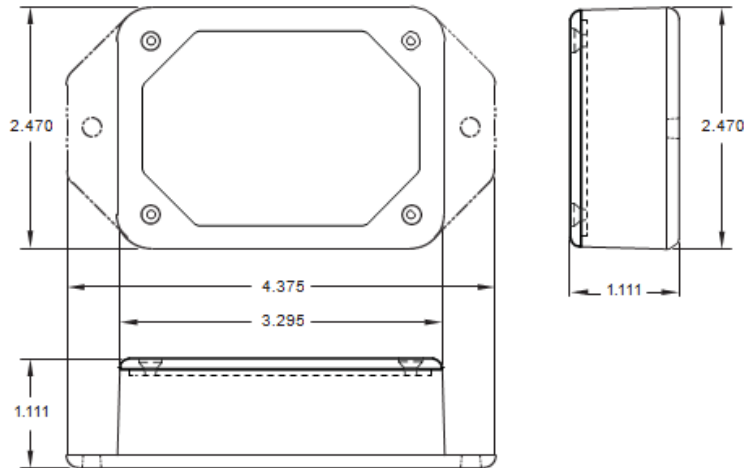
Response Time

The response time on this sensor is approximately 8 seconds on average. A lot of factors play into how quick this is, such as distance, the amount of objects between you and the sensor, etc. This guarantees a speedy connection providing quick information if needed.

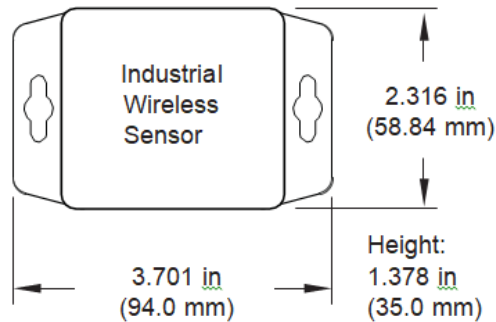
Important to Know

Using this sensor under extreme conditions will accelerate aging. Do not use this sensor for the following applications, as they can cause this sensor to fail: corrosive gas or deoxidizing gas, volatile or flammable gas, dusty conditions, under low or high pressure, wet or excessively humid locations, places with salt water, oils chemical liquids or organic solvents, or places with excessively strong vibrations.

Mechanical Dimensions (inches)

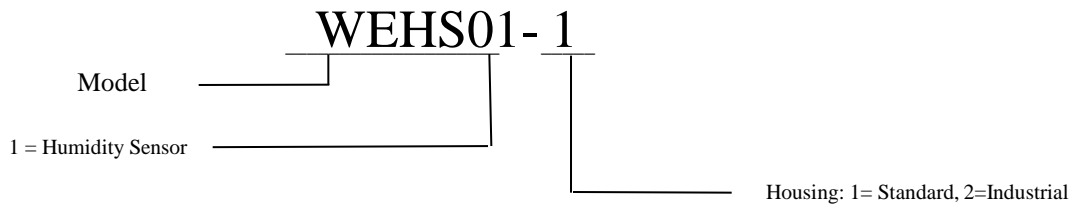


Pic. 1 - Standard Housing IP55



Pic. 2 - Industrial Housing IP65

Part Number Configuration



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