



HOBOnet Wireless Temperature & Relative Humidity Sensor (Battery & Solar Powered)

Product Images



Short Description

HOBOnet Wireless Temp/RH Sensor - pre-configured and ready to deploy. Data is accessed through HOBOLink web-based software.

Description

The HOBOnet Wireless Temperature and Relative Humidity (RH) Sensor provides a cost-effective and scalable solution for web-enabled monitoring of air temperature and humidity.

HOBOnet Wireless Sensors communicate data directly to the RX3000 weather station or pass data through

other wireless sensors back to the central station. They are preconfigured and ready to deploy, and data is accessed through HOBOLink, Onset's innovative cloud-based software platform.

Sensor Features

- High accuracy: $\pm 0.2^{\circ}\text{C}$ ($\pm 0.36^{\circ}\text{F}$) and $\pm 2.5\%$ RH
- Robust RH sensor withstands extended use in high-humidity environments

Wireless Features


- 868 MHz wireless mesh self-healing technology - UK & Europe Version (contact us if you will be deploying in another region)
- 450 to 600 meter (1,500 to 2,000 feet) wireless range and up to five hops
- Up to 50 wireless sensors per RX3000
- Simple button-push to join the HOBOnet wireless network
- Onboard memory to ensure no data loss
- Powered by rechargeable AA batteries and built-in solar panel

The RXW-THC-868 sensor supports the following measurements: Evapotranspiration, Relative Humidity and Temperature

Note: A complete [HOBOnet](#) system requires at least one [HOBO RX3000](#) Remote Monitoring Station, a [HOBOnet Wireless Manager](#), and a [HOBOnet Wireless Sensor](#). [HOBOnet Wireless Repeaters](#) can be added to extend the range.

For full specifications for this product, please see the User Manual found under the Resources tab below.

Additional Information

Country of Manufacture	United States																			
Brand	Onset HOBO																			
Measurements	Evapotranspiration, Humidity, Temperature																			
Typical applications	Environmental (Outdoor), Field Research, Weather Monitoring																			
Explanation	Sensor																			
		<table border="1"> <thead> <tr> <th></th> <th>Temperature</th> <th>RH</th> </tr> </thead> <tbody> <tr> <td>Measurement Range</td> <td>-40°C to 75°C (-40°F to 167°F)</td> <td>0–100% RH at -40° to 75°C (-40° to 167°F); exposure to conditions below -20°C (-4°F) or above 95% RH may temporarily increase the maximum RH sensor error by an additional 1%</td> </tr> <tr> <td>Accuracy</td> <td>±0.25°C from -40° to 0°C (±0.45°F from -40° to 32°F) ±0.20°C from 0° to 70°C (±0.36°F from 32° to 158°F) ±0.25°C from 70° to 100°C (±0.45°F from 158° to 212°F)</td> <td>±2.5% from 10% to 90% RH typical to a maximum of ±3.5% including hysteresis at 25°C (77°F); below 10% and above 90% ±5% typical</td> </tr> <tr> <td>Resolution</td> <td>0.02°C (0.036°F)</td> <td>0.01% RH</td> </tr> <tr> <td>Drift</td> <td><0.01°C (0.018°F) per year</td> <td><1% per year typical</td> </tr> <tr> <td>Response Time</td> <td>Without solar radiation shield: 2 minutes, 30 seconds in air moving 1 m/sec With RS3-B solar radiation shield: 5 minutes in air moving 1 m/sec</td> <td>5 minutes in air moving 1 m/sec with protective cap</td> </tr> </tbody> </table>		Temperature	RH	Measurement Range	-40°C to 75°C (-40°F to 167°F)	0–100% RH at -40° to 75°C (-40° to 167°F); exposure to conditions below -20°C (-4°F) or above 95% RH may temporarily increase the maximum RH sensor error by an additional 1%	Accuracy	±0.25°C from -40° to 0°C (±0.45°F from -40° to 32°F) ±0.20°C from 0° to 70°C (±0.36°F from 32° to 158°F) ±0.25°C from 70° to 100°C (±0.45°F from 158° to 212°F)	±2.5% from 10% to 90% RH typical to a maximum of ±3.5% including hysteresis at 25°C (77°F); below 10% and above 90% ±5% typical	Resolution	0.02°C (0.036°F)	0.01% RH	Drift	<0.01°C (0.018°F) per year	<1% per year typical	Response Time	Without solar radiation shield: 2 minutes, 30 seconds in air moving 1 m/sec With RS3-B solar radiation shield: 5 minutes in air moving 1 m/sec	5 minutes in air moving 1 m/sec with protective cap
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		Wireless Mote																		
	Operating Temperature Range	-25° to 60°C (-13° to 140°F) with rechargeable batteries -40 to 70°C (-40 to 158°F) with lithium batteries																		
	Radio Power	12.6 mW (+11 dBm) non-adjustable																		
	Transmission Range	Reliable connection to 457.2 m (1,500 ft) line of sight at 1.8 m (6 ft) high Reliable connection to 609.6 m (2,000 ft) line of sight at 3 m (10 ft) high																		
	Wireless Data Standard	IEEE 802.15.4																		
	Radio Operating Frequencies	RXW-THC-900: 904–924 MHz RXW-THC-868: 866.5 MHz RXW-THC-922: 916–924 MHz																		
	Modulation Employed	OQPSK (Offset Quadrature Phase Shift Keying)																		
	Data Rate	Up to 250 kbps, non-adjustable																		
	Duty Cycle	<1%																		
	Maximum Number of Motes	50 motes per one RX Wireless Sensor Network																		
	Battery Type/ Power Source	Two AA 1.2 V rechargeable NiMH batteries powered by built-in solar panel or two AA 1.5 V lithium batteries for operating conditions of -40 to 70°C (-40 to 158°F)																		
	Battery Life	With NiMH batteries: Typical 3–5 years when operated in the temperature range -20° to 40°C (-4°F to 104°F) and positioned toward the sun (see Deployment and Mounting), operation outside this range will reduce the battery service life With lithium batteries: 1 year, typical use																		
	Memory	16 MB																		
	Dimensions	Sensor: 5.1 x 33 mm (0.2 x 1.3 inches) Cable length: 2 m (6.56 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches)																		
	Weight	Sensor and cable: 110 g (3.88 oz); Mote: 223 g (7.87 oz)																		
Materials	Sensor: Polyamide Mote: PCPBT, silicone rubber seal																			
Environmental Rating	Sensor: Weatherproof: 0 to 100% RH intermittent condensing environments. For best results, the sensor should be mounted inside a protective enclosure, such as a solar radiation shield. Mote: IP67, NEMA																			
Compliance	 RXW-THC-868																			
Ideal For	Professional, Agronomy																			