

RXW-THC-900 • RXW-THC-868 • RXW-THC-922 • RXW-THC-921



HOBOnet Temp/RH Sensor

Solar Powered

A solar-powered wireless sensor that works with the HOBOnet system to monitor air temperature and relative humidity.

Important Information

A complete system requires at least one HOBOnet Remote Monitoring Station, a HOBOnet Wireless Manager, and a HOBOnet Wireless Sensor, OR one HOBOnet MicroRX Station (which has an integrated HOBOnet Wireless Manager) and a HOBOnet Wireless Sensor. HOBOnet Wireless Repeaters (RXW-RPTR-xxx or RXW-RPTR-B-xxx) can be added to extend the range.

Supported Measurements

Dew Point, Evapotranspiration, Relative Humidity, Temperature

Features

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

- 900 MHz wireless mesh self-healing technology
- 450 to 600 meter (1,500 to 2,000 feet) wireless range and up to five hops
- Up to 50 wireless sensors or 336 data channels per HOBOnet RX station
- 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

Contact Us

Sales (8am to 5pm ET, Monday through Friday)

- Email sales@onsetcomp.com
- Call 1-508-759-9500
- In U.S. toll free 1-800-564-4377
- Fax 1-508-759-9100

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Technical Support (8am to 5pm ET, Monday through Friday)

- Contact Product Support www.onsetcomp.com/support/contact
- Call 1-508-759-9500
- In U.S. toll free 1-877-564-4377

HOBOnet Temp/RH Sensor (RXW-THC-xxx) Specifications

Temperature Sensor

Measurement Range	-40°C to 75°C (-40°F to 167°F)
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 75°C (±0.45°F from 158° to 167°F)
Resolution	0.02°C (0.036°F)
Drift	<0.01°C per year (0.018°F per year)
Response Time (typical, to 90% of change)	With RS3-B solar radiation shield: 6 minutes, 30 seconds in air moving 1 m/sec

RH Sensor

Measurement Range	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	±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	0.01% RH
Drift	<1% per year typical
Response Time (typical, to 90% of change)	With RS3-B solar radiation shield: 30 seconds in air moving 1 m/sec

Wireless Mote

Operating Temperature Range	-25° to 60°C with rechargeable batteries (-13° to 140°F with rechargeable batteries) -40° to 70°C with lithium batteries (-40° to 158°F with lithium batteries)
Radio Power	12.6 mW non-adjustable (+11 dBm non-adjustable)
Transmission Range	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-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	Up to 50 wireless sensors or 336 data channels per one HOBO RX station
Logging Rate	1 minute to 18 hours
Number of Data Channels	3
Battery Type/Power Source	Two AA 1.2V 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 (see Deployment and M
Memory	16 MB
Dimensions	Cable length: 2 m (6.56 ft)
Weight	Sensor and cable: 110 g (3.88 oz);
Materials	Mote: PCPBT, silicone rubber seal
Environmental Rating	Mote: IP67, NEMA 6

