ONSET

HOBO®
Data Logging Solutions
Australia & New Zealand

RXW-THC-xxx Sensor

HOBOnet Temp/RH Sensor

The HOBOnet Wireless Temperature and Relative Humidity 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.

Supported Measurements:

Evapotranspiration, Relative Humidity and Temperature

Key Advantages:

Sensor Features

- High accuracy: ± 0.2°C (± 0.36°F) and ± 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 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

RXW-THC-xxx Sensor Specifications

Sensor

	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 (typical, to 90% of change)	Without solar radiation shield: 3 minutes, 45 seconds in air moving 1 m/sec With RS3-B solar radiation shield: 6 minutes, 30 seconds in air moving 1 m/sec	Without solar radiation shield: 15 seconds in air moving 1 m/sec With RS3-B solar radiation shield: 30 seconds in air moving 1 m/sec

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 Marks	RXW-THC-900 RXW-THC-868 RXW-THC-922

Contact Us

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