



RXW-THC-B-xxx Sensor

HOBOnet Wireless 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 RX 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.



Key Advantages:

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 RX Station
- Simple button-push to join the HOBOnet wireless network
- Onboard memory to ensure no data loss
- Powered by 2 user-replaceable lithium AA batteries



HOBO RXW-THC-B-xxx S 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) | 3 minutes, 45 seconds in air moving 1 m/s | 15 seconds in air moving 1 m/s |
| Wireless Mote | | |
| Operating Temperature Range | -40 to 70°C (-40 to 158°F) | |
| 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-B-900: 904–924 MHz RXW-THC-B-868: 866.5 MHz RXW-THC-B-921: 921 MHz RXW-THC-B-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 HOBOnet RX station | |
| Logging Rate | 1 minute to 18 hours | |
| Number of Channels | 3 | |
| Battery Type | Two AA 1.5 V lithium batteries | |
| Battery Life | 1 year, typical use | |
| Memory | 16 MB | |
| Dimensions | Sensor: 45.97 x 11.43 x 10.16 mm (1.81 x 0.45 x 0.40 inches) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) | |
| Weight | 223 g (7.87 oz) | |
| Materials | Sensor: Polyamide Mote: PCPBT, silicone rubber seal | |
| Environmental Rating | IP67, NEMA 6 | |
| Compliance Marks |  RXW-THC-B-900  RXW-THC-B-868 RXW-THC-B-921  RXW-THC-B-922 | |

