



HOBO® RXW-THC-B-xxx Sensor

HOBOnet Wireless Temp/RH

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 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	$\pm 0.25^{\circ}\text{C}$ from -40° to 0°C ($\pm 0.45^{\circ}\text{F}$ from -40° to 32°F) $\pm 0.20^{\circ}\text{C}$ from 0° to 70°C ($\pm 0.36^{\circ}\text{F}$ from 32° to 158°F) $\pm 0.25^{\circ}\text{C}$ from 70° to 100°C ($\pm 0.45^{\circ}\text{F}$ from 158° to 212°F)	$\pm 2.5\%$ from 10% to 90% RH typical to a maximum of $\pm 3.5\%$ including hysteresis at 25°C (77°F); below 10% and above 90% $\pm 5\%$ 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 HOBO 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	