

RXW-TMB-900 • RXW-TMB-868 • RXW-TMB-921 • RXW-TMB-922



## HOBOnet Wireless Temperature Sensor

A solar-powered wireless sensor that works with the HOBOnet system to monitor air, soil, and water temperatures.

### 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

Air Temperature, Soil Temperature, Temperature, Water Temperature

### Features

#### Sensor Features

- Measurement range of -40° to 100°C (-40° to 212°F)
- High accuracy:  $\pm 0.2^{\circ}\text{C}$  ( $\pm 0.36^{\circ}\text{F}$ )
- Stainless-steel sensor tip
- Sensor and cable rated for immersion in water or soil up to 50°C for up to 1 year

#### 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](mailto:sales@onsetcomp.com)
- Call 1-508-759-9500
- In U.S. toll free 1-800-564-4377
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Technical Support (8am to 5pm ET, Monday through Friday)

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

## HOBOnet Wireless Temperature Sensor (RXW-TMB-xxx) Specifications

Sensor	
<b>Measurement Range</b>	-40° to 100°C (-40° to 212°F)
<b>Accuracy</b>	±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)
<b>Resolution</b>	0.02°C (0.036°F)
<b>Drift</b>	<0.01°C (0.018°F) per year
<b>Response Time (typical, to 90% of change)</b>	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
Wireless Mote	
<b>Operating Temperature Range</b>	-25° to 60°C (-13° to 140°F) with rechargeable batteries -40° to 70°C (-40° to 158°F) with lithium batteries
<b>Radio Power</b>	12.6 mW (+11 dBm) non-adjustable
<b>Transmission Range</b>	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
<b>Wireless Data Standard</b>	IEEE 802.15.4
<b>Radio Operating Frequencies</b>	RXW-TMB-900: 904-924 MHz RXW-TMB-868: 866.5 MHz RXW-TMB-921: 921 MHz RXW-TMB-922: 916-924 MHz
<b>Modulation Employed</b>	OQPSK (Offset Quadrature Phase Shift Keying)
<b>Data Rate</b>	Up to 250 kbps, non-adjustable
<b>Duty Cycle</b>	<1%
<b>Maximum Number of Motes</b>	Up to 50 wireless sensors or 336 data channels per one HOBOnet RX station
<b>Logging Rate</b>	1 minute to 18 hours
<b>Number of Data Channels</b>	2
<b>Battery Type/Power Source</b>	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
<b>Battery Life</b>	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
<b>Memory</b>	16 MB
<b>Dimensions</b>	Sensor: 5.3 x 33 mm (0.2 x 1.3 inches) Cable length: 5 m (16.4 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches)
<b>Weight</b>	Sensor and cable: 82.5 g (2.91 oz) Mote: 223 g (7.87 oz)
<b>Materials</b>	Sensor: Stainless steel waterproof tip Mote: PCPBT, silicone rubber seal
<b>Environmental Rating</b>	Sensor and cable: Immersion in water up to 50°C (122°F) for 1 year Mote: IP67, NEMA 6