



## RXW-TMB-xxx Sensor

### HOBOnet Temp Sensor

The HOBOnet Wireless Temperature Sensor provides a cost-effective and scalable solution for web-enabled monitoring of air, soil, and water temperatures. 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:

Air Temperature, Soil Temperature, Temperature and Water Temperature

#### Key Advantages:

#### 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 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-TMB-xxx Sensor 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 (to 90% of step 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-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>	50 motes per one RX Wireless Sensor Network
<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 (-40 to 158°F)
<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: 5.1 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
<b>Compliance Marks</b>	 RXW-TMB-900  RXW-TMB-868  RXW-TMB-922