Call our friendly team on
+44 (0)1243 558270

Tempcon Instrumentation
Ford Lane Business Park
Ford
West Sussex
BN18 0UZ, UK
www.tempcon.co.uk

# HOBOnet Wind Speed & Direction Sensor

## Product Images

## Short Description

The HOBOnet Wireless Wind Speed and Direction Sensor - preconfigured and ready to deploy. Data is accessed through HOBOlink web-based software.

## Description

**The HOBOnet Wireless Wind Speed and Direction Sensor records wind speed, wind gust, and wind direction.**

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.

#### Sensor Features

- Provides average wind speed, highest 3-second wind gust, and average wind direction for the measurement interval
- Designed to meet World Meteorological Organization (WMO) guidelines

### 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

The RXW-WCF-868 sensor supports the following measurements: Evapotranspiration and Wind

**Note:** A complete HOBOnet system requires at least one HOBO RX3000 Remote Monitoring Station, a HOBOnet Wireless Manager, and a HOBOnet Wireless Sensor. HOBOnet Wireless Repeaters can be added to extend the range.

For full specifications for this product, please see the User Manual found under the Resources tab below.

# Additional Information

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|---|---|
| Country of Manufacture | United States |
| Brand | Onset HOBO |
| Measurements | Wind Direction, Wind Speed |
| Typical applications | Environmental (Outdoor), Field Research, Weather Monitoring |

Explanation

### Sensor

| | Wind Speed/Gust | Wind Direction |
|---|---|---|
| **Measurement Range** | 0 to 76 m/sec (0 to 170 mph) | 0 to 355 degrees |
| **Accuracy** | ±1.1 m/sec (±2 mph) or ±5% of reading, whichever is greater | ±7 degrees |
| **Resolution** | 0.5 m/sec (1.1 mph) | 1.4 degrees (0 to 355 degrees) |
| **Starting Threshold** | ≤1 m/sec (2.2 mph) | 1 m/sec (2.2 mph) |
| **Turning Radius** | 108 mm (4.25 in.) | Approximately 135 mm (5.25 in.) |
| **Measurement Definition** | Cup revolutions are accumulated every three seconds for the duration of the logging interval<br>Wind speed: Average speed for the entire logging interval<br>Gust speed: The highest three-second wind recorded during the logging interval | Unit vector averaging used; vector components for each wind measurement are calculated every three seconds for duration of logging interval |

### Wireless Mote

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|---|---|
| **Operating Temperature Range** | -25° to 60°C (-13° to 140°F) with rechargeable batteries<br>-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<br>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-WCF-900: 904–924 MHz<br>RXW-WCF-868: 866.5 MHz<br>RXW-WCF-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 1.2V 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: 470 x 191 x 121 mm (18.5 x 7.5 x 4.75 in.)<br>Cable length: 3 m (9.8 ft)<br>Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) |
| **Weight** | Sensor and cable: 1.332 kg (2 lb, 15 oz)<br>Mote: 223 g (7.87 oz) |
| **Materials** | Sensor: Polycarbonate wind cups, sealed stainless steel bearing, UV-resistant ABS wind vane and black-anodized aluminum anemometer arm<br>Mote: PCPBT, silicone rubber seal |
| **Environmental Rating** | Sensor: Weatherproof<br>Mote: IP67, NEMA 6 |
| **Compliance** | ☒ RXW-WCF-868 |

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| Ideal For | Professional, Agronomy |