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HOBOnet Wireless Ultrasonic 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 Ultrasonic Wind Speed & Direction Sensor is compact and rugged with no moving parts.

Because this sensor is ultrasonic it can measure very low wind speeds, down to 0.4 m/s (compared to 1.0 m/s for HOBO mechanical sensors). HOBOnet Wireless Sensors communicate data directly to the HOBO RX3000 or the HOBO MicroRX 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

- Compact and rugged with no moving parts
- No starting threshold – suitable for low wind speeds
- No wind direction dead band – accurate wind data in all directions
- Powered by its own built-in solar panel

Wireless Features

- 868 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 HOBO 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.

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 under the Resources tab below.

Additional Information

Country of Manufacture	United States
Brand	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 41.16 m/s (0 to 92.07 mph)	0 to 359 degrees
Accuracy	±0.8 m/s (1.79 mph) or ±4% of reading, whichever is greater	±7 degrees
Resolution	0.4 m/s (0.89 mph)	1 degree (0 to 359 degrees)
Measurement Definition	Wind speed readings are taken every three seconds for the duration of the logging interval Wind speed: Average speed for the entire logging interval Gust speed: The highest three-second wind recorded during the logging interval See Measurement Operation.	Unit vector averaging used; vector components for each wind measurement are calculated every three seconds for duration of logging interval
Operating Temperature Range Without Icing	-15°C to 55°C (5°F to 131°F)	

Wireless Mote

Operating Temperature Range	-25° to 60°C (-13° to 140°F) with rechargeable batteries -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 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 RXW-WCF-868: 866.5 MHz 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	Sensor: Photovoltaic panel, LIFEP04 3.2 V -600 mAh battery Mote: 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)
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 length: 380 mm (14.96 inches) Sensor head diameter: 60 mm (2.36 inches) Sensor rod diameter: 16 mm (0.63 inches) Cable length: 3 m (9.8 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches)
Weight	Sensor and cable: 200 g (7 oz) Mote: 223 g (7.87 oz)
Materials	Sensor: Polyacetal Mote: PCPBT, silicone rubber seal
Environmental Rating	Sensor: Weatherproof Mote: IP67, NEMA 6
Compliance	☒ RXW-WCG-868

Ideal For	Professional, Agronomy