ONSET

HOBO®
Data Logging Solutions
Australia & New Zealand

RXW-WCG-xxx Sensor

Ultrasonic Wind Speed & Direction Sensor



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 our mechanical sensors). HOBOnet Wireless Sensors communicate data directly to the HOBO 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:

Wind

Key Advantages:

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

- 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-WCG-xxx Sensor Specifications

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	0.2 to 3 m/s (0.44-6.7 mph): ±4 degrees >3 m/s (6.7 mph): ±2 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 (see Measurement Operation)
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-WCG-900: 904-924 MHz RXW-WCG-868: 866.5 MHz RXW-WCG-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 and cable: Weatherproof Mote: IP67, NEMA 6	
Compliance Marks	RXW-WCG-900	
	RXW-WCG-868	
	RXW-WCG-922	

Contact Us

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