ONSET

HOBO® RXW-RGF-xxx Sensor

HOBOnet Rainfall (metric) Sensor

The HOBOnet Wireless AeroCone® Rain Gauge records rainfall in 0.2-millimeter increments. 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.



Key Advantages:

Sensor Features

- · Resolution of 0.2 millimeters
- · Bird spikes
- · Debris screen that locks in place
- 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 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

HOBO RXW-RGF-xxx Sensor Specifications

Sensor

Measurement Range	0 to 10.2 cm (0 to 4 in.) per hour, maximum 4,000 tips per logging interval
Accuracy	$\pm4.0\%$, ±1 rainfall count between 0.2 and 50.0 mm (0.01 and 2.0 in.) per hour; $\pm5.0\%$, ±1 rainfall count between 50.0 and 100.0 mm (2.0 and 4.0 in.) per hour
Resolution	0.01 in.

Wireless Mote

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° 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: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks FC RXW-RGF-900 C RXW-RGF-922		
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-RGF-900: 904-924 MHz RXW-RGF-921: 921 MHz RXW-RGF-921: 921 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 vithin 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° 40°C (-4° Fto 104°F) and positioned toward the sun (see Deployment and Mounting), operation outside this range will reduce the battery service life With lithium batteries: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 223 g (7.87 oz) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: U*-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating <th>Operating Temperature Range</th> <th>· ·</th>	Operating Temperature Range	· ·
Reliable connection to 609.6 m (2,000 ft) line of sight at 3 m (10 ft) high Wireless Data Standard Radio Operating Frequencies RXW-RGF-900: 904-924 MHz RXW-RGF-988: 866.5 MHz RXW-RGF-922: 916-924 MHz RXW-RGF-921: 921 MHz OQPSK (Offset Quadrature Phase Shift Keying) Data Rate Duty Cycle 41% Maximum Number of Motes Battery Type/ Power Source Two AA 1.2V rechargeable NiMH batteries, powered by built-in solar panel or two AA V lithium batteries for operating conditions of -40 to 70°C (-40 to 158°F) With NiMH batteries: Typical 3-5 years when operated in the temperature range -20° 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: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating FC RXW-RGF-900 CE RXW-RGF-900 CE RXW-RGF-902	Radio Power	12.6 mW (+11 dBm) non-adjustable
Radio Operating Frequencies RXW-RGF-900: 904-924 MHz RXW-RGF-868: 866.5 MHz RXW-RGF-921: 921 MHz Modulation Employed OQPSK (Offset Quadrature Phase Shift Keying) Data Rate Up to 250 kbps, non-adjustable Duty Cycle <1% Maximum Number of Motes Battery Type/ Power Source With NiMH batteries or 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° 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: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating FC RXW-RGF-900 C RXW-RGF-900 C RXW-RGF-902	Transmission Range	
RXW-RGF-868: 866.5 MHz RXW-RGF-922: 916-924 MHz RXW-RGF-921: 921 MHz Modulation Employed OQPSK (Offset Quadrature Phase Shift Keying) Data Rate Up to 250 kbps, non-adjustable Outy Cycle A1% Maximum Number of Motes Battery Type/ Power Source With NiMH batteries Sensor Network Duth C (-40 to 158°F) Battery Life With NiMH batteries: Typical 3-5 years when operated in the temperature range -20° 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: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks FC RXW-RGF-900 C RXW-RGF-900 C RXW-RGF-922	Wireless Data Standard	IEEE 802.15.4
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 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° 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: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks FC RXW-RGF-900 C RXW-RGF-968 Exw-RGF-922	Radio Operating Frequencies	RXW-RGF-868: 866.5 MHz RXW-RGF-922: 916–924 MHz
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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 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° 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: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks RXW-RGF-900 € RXW-RGF-868 € RXW-RGF-868 € RXW-RGF-868	Data Rate	Up to 250 kbps, non-adjustable
Two AA 1.2V rechargeable NiMH batteries, powered by built-in solar panel or two AA 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° 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: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks FC RXW-RGF-900 C RXW-RGF-900 C RXW-RGF-922	Duty Cycle	<1%
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° 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: year, typical use Memory 16 MB Dimensions Sensor: 16.5 cm opening diameter (6.5 in.) x 24 cm (9.5 in.) high; 214 cm2 (33.2 in.2 collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks FC RXW-RGF-900 C RXW-RGF-922	Maximum Number of Motes	50 motes per one RX Wireless Sensor Network
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collection area Cable length: 2 m (6.6 ft) Mote: 16.2 x 8.59 x 4.14 cm (6.38 x 3.38 x 1.63 inches) Weight Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz) Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks Compliance Marks RXW-RGF-900 RXW-RGF-922	Memory	16 MB
Materials Sensor: UV-stabilized ABS plastic housing; tipping spoon mechanism with magnetic is switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks FC RXW-RGF-900 € RXW-RGF-868 RXW-RGF-922	Dimensions	Cable length: 2 m (6.6 ft)
switch pivots on metal shaft Mote: PCPBT, silicone rubber seal Environmental Rating Sensor: Weatherproof Mote: IP67, NEMA 6 Compliance Marks FC RXW-RGF-900 C RXW-RGF-922	Weight	Sensor and cable: 1.2 kg (2.7 lbs) Mote: 223 g (7.87 oz)
Mote: IP67, NEMA 6 Compliance Marks FC RXW-RGF-900 C RXW-RGF-868 RXW-RGF-922	Materials	
RXW-RGF-900 • RXW-RGF-868 • RXW-RGF-922	Environmental Rating	
	Compliance Marks	RXW-RGF-868