



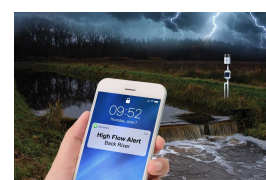
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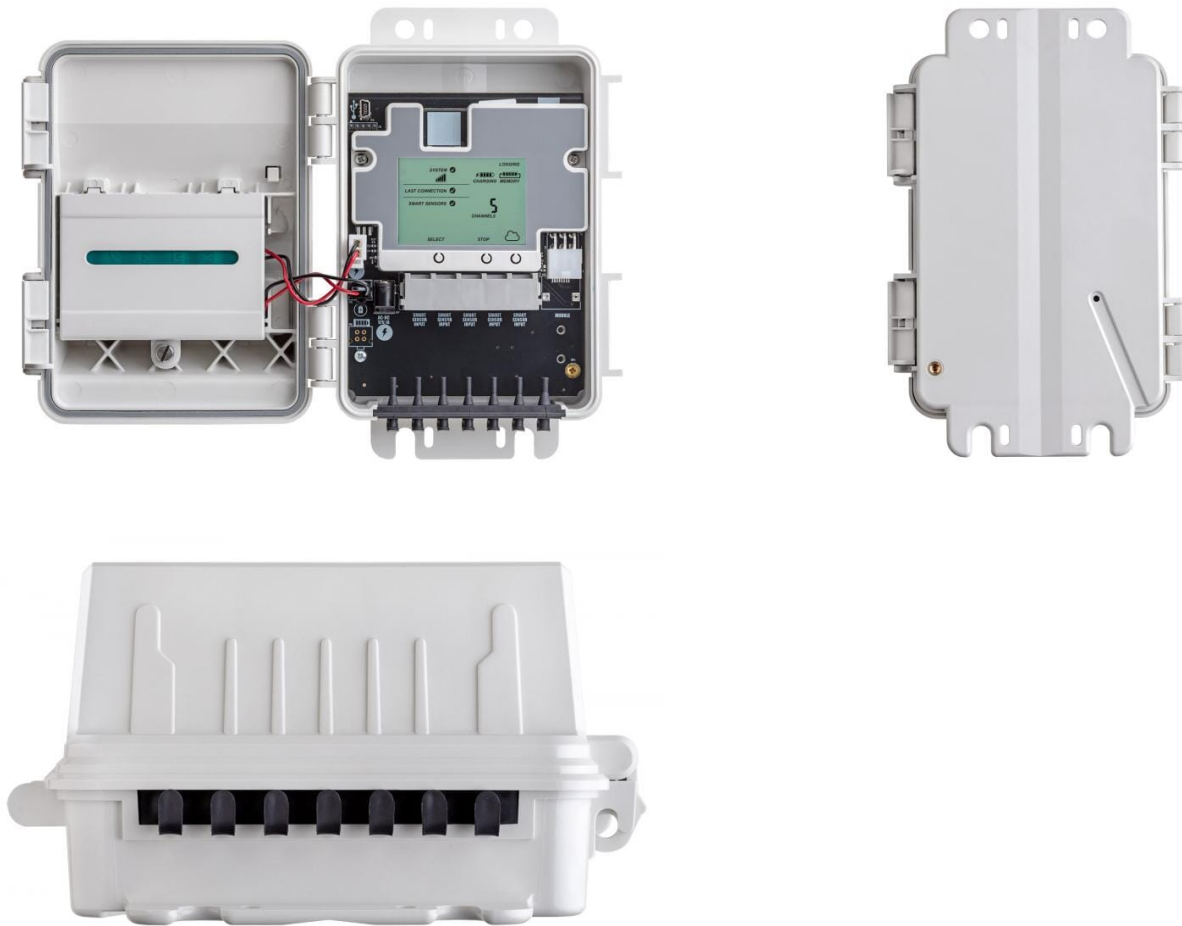
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# HOBO RX2100-WL MicroRX Cellular Web-enabled Water Level Monitoring Station (Wired Sensors)

## Product Images





## Short Description

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**Get the water level data you need - delivered to the cloud, in even the harshest conditions.**

The compact and durable station together with the non-vented water level sensor are easily portable, so can be relocated if/when needs change, with minimal installation cost at each site.

## Description

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The cost-effective HOBOMicroRX station is ideal for flood alert system, storm water monitoring, irrigation, hydrological research, and environmental applications. Pre-programmed water flow formulas and a stage discharge table result in easy and intuitive configuration. Spend more time focusing on results, and less time on configuration and data access.

## Key Features

- **Keep updated with changes in water level as they occur** - real-time alerts via text message & email
- **Eliminate complicated manual calculations** - pre-programmed water flow and accumulated rainfall formulas trigger immediate notifications of critical water level conditions
- **Powerful web-based access to your data** - with [HOBOLink cloud-based software](#): view and manage

your water level measurements, configure alarms, create custom dashboards

- **Reduce maintenance visits** - non-vented water level sensor, with a choice of four ranges
- **Station-side alarms** - for water flow and accumulated rainfall triggered at time of measurement
- **Expandable** - add up to five additional sensors to monitor other parameters such as rainfall & soil moisture (comes with integrated barometric pressure sensor)
- **Solar and battery power options:**
  - Model RX2104 - Integrated 1.7 W solar panel with rechargeable battery pack (for extra solar power, a 5W or 15W external solar panel can be added to the RX2104)
  - Model RX2103 - User-replaceable AA lithium batteries
- **Up to 10-minute connection rates** - via 4G cellular data plans
- **Built tough** - compact IP66/NEMA 4X enclosure
- **Easy integration** - can provide provide an automated data feed to [AQUARIUS Analytics Software for Water Environments](#).

# Additional Information

Country of Manufacture	United States
	To see the full specifications for this product, please see the product manual under the Resources tab.
<b>Operating Range</b>	RX2103: -40° to 60°C (-40° to 140°F) RX2104: -20° to 60°C (-4° to 140°F)
<b>Smart Sensor Connectors</b>	5
<b>Smart Sensor Network Cable Length</b>	100 m (328 ft) maximum
<b>Smart Sensor Data Channels</b>	Maximum of 15 (some smart sensors use more than one data channel; see sensor manual for details)
<b>Logging Rate</b>	1 minute to 18 hours
<b>Time Accuracy</b>	±8 seconds per month in 0° to 40°C (32°F to 104°F) range; ±30 seconds per month in -40° to 60°C (-40° to 140°F) range
<b>Battery Type/Power Source</b>	RX2103: 6 AA 1.5 V lithium batteries or AC power adapter (P-AC-1) RX2104: Integrated 1.7 watt solar panel and NiMH rechargeable battery pack; optional AC power adapter (P-AC-1) or external solar panel (SOLAR-KW) can be used in place of integrated solar panel
<b>Battery Life</b>	<b>RX2103 Battery Life:</b> Battery life with daily connections: • RX2103: 1 year with 2 minute logging Battery life with hourly connections and 1 minute logging: • RX2103: 2 months Note: Deployments in areas with weak cellular strength could reduce battery life. <b>RX2104 Battery Life:</b> Typical: 3+ years when operated in the temperature range -20° to 40°C (-4° to 104°F); operation outside this range will reduce the battery service life. Maximum connection rates with built-in solar panel, in full sun: • 10 minute connections year round for latitudes less than 40° • 10 minute connections through three seasons in other regions, reduced to 30 minute connections in winter Maximum connection rates with external 5W or 15W solar panel: • 10 minute connections year round, in full sun • Connection rate with external solar panels may be less if deployed in partial sun Battery life without solar recharging, with hourly connections and 1 minute logging: • RX2104: 2 months
<b>Memory</b>	16 MB, 1 million measurements, continuous logging
<b>Alarm Notification Latency</b>	Logging interval plus 2-4 minutes, typical
<b>Enclosure Access</b>	Hinged door secured by two latches with eyelets for use with user-supplied padlocks
<b>LCD</b>	LCD is visible from 0° to 50°C (32° to 122°F); the LCD may react slowly or go blank in temperatures outside this range
<b>Materials</b>	Outer enclosure: Polycarbonate/PBT blend with brass inserts; Interior: Polycarbonate/PBT; Gasket: Silicone foam; Cable channel: Santoprene™ TPE; U Bolts (not included): Steel with zinc dichromate finish
<b>Dimensions</b>	19.95 x 13.68 x 7.49 cm (7.85 x 5.39 x 2.95 in.)
<b>Weight</b>	678 g (23.9 oz)
<b>Mounting</b>	Optional U-bolts are compatible with masts up to 4.14 cm (1.63 in.) mast diameter; can also be mounted with zip ties or mounted to a flat surface with screws
<b>Environmental Rating</b>	Weatherproof enclosure, NEMA 4X and IP66 (requires proper installation of cable channel system)
<b>Wireless Radio</b>	GSMT/GPRS/EDGE: Quad band 850/900/1800/1900 MHz UMTS/HSPA+: Seven band 800/850/900/1800/1900/2100 MHz LTE: Twelve Band: 700/800/850/900/1800/1900/2100/2300 MHz
<b>Antenna</b>	4G LTE
	The CE Marking identifies this product as complying with all relevant directives in the European Union (EU)
	FCC ID: Q9PPL562-W, IC: 10783DA-PL562-W
<b>Water Level Sensor:</b>	
<b>Pressure (Absolute) And Water Level Measurements MX2001-01-S and MX2001-01-TI-S:</b>	
<b>Operation Range</b>	0 to 207 kPa (0 to 30 psia); approximately 0 to 9 m (0 to 30 ft) of water depth at sea level, or 0 to 12 m (0 to 40 ft) of water at 3,000 m (10,000 ft) of altitude
<b>Factory Calibrated Range</b>	69 to 207 kPa (10 to 30 psia), 0° to 40°C (32° to 104°F)
<b>Burst Pressure</b>	310 kPa (45 psia) or 18 m (60 ft) depth
<b>Water Level Accuracy*</b>	Typical error: ±0.05% FS, 0.5 cm (0.015 ft) water Maximum error: ±0.1% FS, 1.0 cm (0.03 ft) water
<b>Raw Pressure Accuracy**</b>	±0.3% FS, 0.62 kPa (0.09 psi) maximum error
<b>Resolution</b>	<0.02 kPa (0.003 psi), 0.21 cm (0.007 ft) water
<b>Pressure Response Time (90%)+</b>	<1 second at a stable temperature
<b>Pressure (Absolute) And Water Level Measurements MX2001-02-S:</b>	
<b>Operation Range</b>	0 to 400 kPa (0 to 58 psia); approximately 0 to 30.6 m (0 to 100 ft) of water depth at sea level, or 0 to 33.6 m (0 to 111 ft) of water at 3,000 m (10,000 ft) of altitude
<b>Factory Calibrated Range</b>	69 to 400 kPa (10 to 58 psia), 0° to 40°C (32° to 104°F)
<b>Burst Pressure</b>	500 kPa (72.5 psia) or 40.8 m (134 ft) depth
<b>Water Level Accuracy*</b>	Typical error: ±0.05% FS, 1.5 cm (0.05 ft) water Maximum error: ±0.1% FS, 3.0 cm (0.01 ft) water
<b>Raw Pressure Accuracy**</b>	±0.3% FS, 1.20 kPa (0.17 psi) maximum error
<b>Resolution</b>	<0.04 kPa (0.006 psi), 0.41 cm (0.013 ft) water
<b>Pressure Response Time (90%)+</b>	<1 second at a stable temperature
<b>Pressure (Absolute) And Water Level Measurements MX2001-03-S:</b>	
<b>Operation Range</b>	0 to 850 kPa (0 to 123.3 psia); approximately 0 to 76.5 m (0 to 251 ft) of water depth at sea level, or 0 to 79.5 m (0 to 262 ft) of water at 3,000 m (10,000 ft) of altitude
<b>Factory Calibrated Range</b>	69 to 850 kPa (10 to 123.3 psia), 0° to 40°C (32° to 104°F)
<b>Burst Pressure</b>	1,200 kPa (174 psia) or 112 m (368 ft) depth
<b>Water Level Accuracy*</b>	Typical error: ±0.05% FS, 3.8 cm (0.125 ft) water Maximum error: ±0.1% FS, 7.6 cm (0.25 ft) water
<b>Raw Pressure Accuracy**</b>	±0.3% FS, 2.55 kPa (0.37 psi) maximum error
<b>Resolution</b>	<0.05 kPa (0.012 psi), 0.87 cm (0.028 ft) water
<b>Pressure Response Time (90%)+</b>	<1 second at a stable temperature
<b>Pressure (Absolute) And Water Level Measurements MX2001-04-S and MX2001-04-TI-S:</b>	
<b>Operation Range</b>	0 to 145 kPa (0 to 21 psia); approximately 0 to 4 m (0 to 13 ft) of water depth at sea level, or 0 to 7 m (0 to 23 ft) of water at 3,000 m (10,000 ft) of altitude
<b>Factory Calibrated Range</b>	69 to 145 kPa (10 to 21 psia), 0° to 40°C (32° to 104°F)
<b>Burst Pressure</b>	310 kPa (45 psia) or 18 m (60 ft) depth
<b>Water Level Accuracy*</b>	Typical error: ±0.05% FS, 3.8 cm (0.125 ft) water Maximum error: ±0.1% FS, 7.6 cm (0.25 ft) water
<b>Raw Pressure Accuracy**</b>	±0.3% FS, 0.43 kPa (0.63 psi) maximum error
<b>Resolution</b>	<0.014 kPa (0.002 psi), 0.14 cm (0.005 ft) water
<b>Pressure Response Time (90%)+</b>	<1 second at a stable temperature
<b>Barometric Pressure (RX2103 and RX2104 station):</b>	
<b>Operation Range</b>	66 to 107 kPa (9.57 to 15.52 psia)
<b>Temperature Calibrated Range</b>	-20 to 50°C (-4 to 122°F)
<b>Accuracy</b>	±0.2 kPa (±0.029 psi) over full temperature range at fixed pressure; maximum error ±0.5% FS
<b>Water Level Accuracy*</b>	Typical error: ±0.075% FS, 0.3 cm (0.01 ft) water Maximum error: ±0.15% FS, 0.6 cm (0.02 ft) water
<b>Resolution</b>	<0.01 kPa (0.0015 psi)
<b>Response Time</b>	<1 second at a stable temperature
<b>Stability (Drift)</b>	0.1° (0.18°) per year
<b>Temperature (Water Level Sensors MX2001-0x-S and MX2001-0x-TI-S):</b>	
<b>Operation Range</b>	-20° to 50°C (-4° to 122°F)
<b>Accuracy</b>	±0.44°C from 0° to 50°C (±0.79°F from 32° to 122°F)
<b>Resolution</b>	0.1°C at 25°C (0.18°F at 77°F)
<b>Response Time (90%)</b>	5 minutes in water (typical)
<b>Stability (Drift)</b>	0.1° (0.18°) per year
	* Water Level Accuracy: With accurate reference water level measurement, known water density, and a stable temperature environment. System Water Level Accuracy equals the sum of the Barometric Water Level Accuracy plus the selected sensor Water Level Accuracy. ** Raw Pressure Accuracy: Absolute pressure sensor accuracy includes all sensor drift, temperature, and hysteresis-induced errors. +++ Changes in Temperature: Allow 20 minutes in water to achieve full temperature compensation of the pressure sensor. There can be up to 0.5% of additional error due to rapid temperature changes. **** Response Time: 90% of the total temperature response time. ***** Contents: Create packet Cable ties Screws and spacers Six AA lithium batteries (RX2103 battery-powered station) Battery pack (RX2104 solar-powered station)
<b>Contents</b>	
<b>Ideal For</b>	Professional
<b>Brand</b>	Onset HOBBO
<b>Onset Product Series</b>	RX
<b>Typical applications</b>	Environmental (Dutdoor), Field Research, Water Quality, Weather Monitoring
<b>Measurements</b>	Barometric Pressure, Differential Pressure, Leaf Wetness, Light Intensity, pH, Pressure, Pulse, Rainfall, Soil Moisture, Temperature, Water Flow, Water Level, Wind Direction, Wind Speed

## Additional Options

<b>Select Station Model</b>	Micro RX Water Level Station RX2103 - battery powered
	MicroRX Water Level Station RX2104 - built-in solar panel
<b>Data Plan</b>	Basic 4G Plan - 60 minutes interval - up to 22 sensors (SP-811)
	Standard 4G Plan - 10 minutes interval - up to 25 sensors (SP-813)
	Premium 4G Plan - 10 minutes interval - up to 65 sensors (SP-815)
<b>Water Level, Temperature &amp; Pressure Sensors</b>	Fresh Water Stainless Steel - 4 Metre Range (MX2001-04-S)
	Fresh Water Stainless Steel - 9 Metre Range (MX2001-01-S)
	Fresh Water Stainless Steel - 30 Metre Range (MX2001-02-S)
	Fresh Water Stainless Steel - 76 Metre Range (MX2001-03-S)
	Salt Water Titanium - 4 Metre Range (MX2001-04-Ti-S)
	Salt Water Titanium - 9 Metre Range (MX2001-01-Ti-S)
<b>Water Level Sensor Cable Length</b>	1 Metre (Cable-RWL-1.0)
	2 Metres (Cable-RWL-2.0)
	5 Metres (Cable-RWL-5.0)
	10 Metres (Cable-RWL-010)
	15 Metres (Cable-RWL-015)
	30 Metres (Cable-RWL-030)
	60 Metres (Cable-RWL-030)
<b>Additional Power Options</b>	15 Watt Solar Panel (SOLAR-15W)
	5 Watt Solar Panel (SOLAR-5W)
	Power Adapter (AC) (SKU: P-AC-1)
<b>Optional Sensors (Hold down Ctrl to select multiple options)</b>	12-bit Temperature/Relative Humidity Smart Sensor - 2m cable (S-THC-M002)
	Radiation Shield for Temp/RH Sensor (RS3-B)

	Davis Wind Speed and Direction Smart Sensor (S-WCF-M003)
	Full Crossarm for Wind Speed/Direction Sensors (M-CAA)
	Ultrasonic Wind Speed & Direction Smart Sensor (S-WCG-M003)
	Barometric Pressure Smart Sensor (S-BPB-CM50)
	Leaf Wetness Smart Sensor (S-LWA-M003)
	Solar Radiation (Silicon Pyranometer) Smart Sensor (S-LIB-M003)
	Solar Radiation Sensor Bracket (M-LBB)
<b>Rainfall Sensors</b>	Davis 0.2 mm Resolution Rain Gauge Smart Sensor (S-RGF-M002)
	0.2 mm Resolution Rain Gauge Smart Sensor (2m cable) (S-RGB-M002)
<b>Soil Moisture Sensors</b>	10HS Soil Moisture Smart Sensor (S-SMD-M005)
	EC-5 Soil Moisture Smart Sensor (S-SMC-M005)
<b>Mounting Options</b>	HOBO 2-Metre Tripod Kit (M-TPB-KIT)
	HOBO 3-Metre Tripod Kit (M-TPA-KIT)
<b>Add Optional Well Cap</b>	Well Cap for MicroRX Water Level Stations