



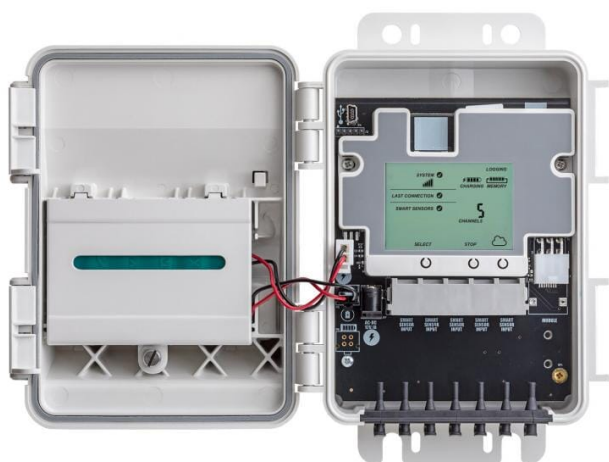
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# HOBO RX2100-WL MicroRX Cellular Web-enabled Water Level Monitoring Station (Wired Sensors)

## 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.
Operating Range	RX2103: -40° to 60°C (-40° to 140°F) RX2104: -20° to 60°C (-4° to 140°F)
Smart Sensor Connectors	5
Smart Sensor Network Cable Length	100 m (328 ft) maximum
Smart Sensor Data Channels	Maximum of 15 (some smart sensors use more than one data channel; see sensor manual for details)
Logging Rate	1 minute to 18 hours
Time Accuracy	±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
Battery Type/Power Source	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
Battery Life	<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
Memory	16 MB, 1 million measurements, continuous logging
Alarm Notification Latency	Logging interval plus 2-4 minutes, typical
Enclosure Access	Hinged door secured by two latches with eyelets for use with user-supplied padlocks
LCD	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
Materials	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
Dimensions	19.95 x 13.68 x 7.49 cm (7.85 x 5.39 x 2.95 in.)
Weight	678 g (23.9 oz)
Mounting	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
Environmental Rating	Weatherproof enclosure, NEMA 4X and IP66 (requires proper installation of cable channel system)
Wireless Radio	GM/GPRS/EDGE: Quad band 850/900/1800/1900 MHz UMTS/HSPA+: Seven band 800/850/900/1800/1900/2100 MHz LTE: Twelve Band 700/800/850/900/1800/1900/2100/2500 MHz
Antenna	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>	
Operation Range	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
Factory Calibrated Range	69 to 207 kPa (10 to 30 psia), 0° to 40°C (32° to 104°F)
Burst Pressure	310 kPa (45 psia) or 18 m (60 ft) depth
Water Level Accuracy*	Typical error: ±0.05% FS, 0.5 cm (0.015 ft) water Maximum error: ±0.1% FS, 1.0 cm (0.03 ft) water
Raw Pressure Accuracy**	±0.3% FS, 0.62 kPa (0.09 psi) maximum error
Resolution	<0.02 kPa (0.003 psi), 0.21 cm (0.007 ft) water
Pressure Response Time (90%)***	<1 second at a stable temperature
<b>Pressure (Absolute) And Water Level Measurements MX2001-02-S:</b>	
Operation Range	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
Factory Calibrated Range	69 to 400 kPa (10 to 58 psia), 0° to 40°C (32° to 104°F)
Burst Pressure	500 kPa (72.5 psia) or 40.8 m (134 ft) depth
Water Level Accuracy*	Typical error: ±0.05% FS, 1.5 cm (0.05 ft) water Maximum error: ±0.1% FS, 3.0 cm (0.01 ft) water
Raw Pressure Accuracy**	±0.3% FS, 1.20 kPa (0.17 psi) maximum error
Resolution	<0.04 kPa (0.006 psi), 0.41 cm (0.013 ft) water
Pressure Response Time (90%)***	<1 second at a stable temperature
<b>Pressure (Absolute) And Water Level Measurements MX2001-03-S:</b>	
Operation Range	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
Factory Calibrated Range	69 to 850 kPa (10 to 123.3 psia), 0° to 40°C (32° to 104°F)
Burst Pressure	1,200 kPa (174 psia) or 112 m (368 ft) depth
Water Level Accuracy*	Typical error: ±0.05% FS, 3.8 cm (0.125 ft) water Maximum error: ±0.1% FS, 7.6 cm (0.25 ft) water
Raw Pressure Accuracy**	±0.3% FS, 2.55 kPa (0.37 psi) maximum error
Resolution	<0.05 kPa (0.012 psi), 0.87 cm (0.028 ft) water
Pressure Response Time (90%)***	<1 second at a stable temperature
<b>Pressure (Absolute) And Water Level Measurements MX2001-04-S and MX2001-04-TI-S:</b>	
Operation Range	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
Factory Calibrated Range	69 to 145 kPa (10 to 21 psia), 0° to 40°C (32° to 104°F)
Burst Pressure	310 kPa (45 psia) or 18 m (60 ft) depth
Water Level Accuracy*	Typical error: ±0.05% FS, 3.8 cm (0.125 ft) water Maximum error: ±0.1% FS, 7.6 cm (0.25 ft) water
Raw Pressure Accuracy**	±0.3% FS, 0.43 kPa (0.63 psi) maximum error
Resolution	<0.014 kPa (0.002 psi), 0.14 cm (0.005 ft) water
Pressure Response Time (90%)***	<1 second at a stable temperature
<b>Barometric Pressure (RX2103 and RX2104 station):</b>	
Operation Range	66 to 107 kPa (9.57 to 15.52 psia)
Temperature Calibrated Range	-20 to 50°C (-4 to 122°C)
Accuracy	±0.2 kPa (±0.029 psi) over full temperature range at fixed pressure; maximum error ±0.5% FS
Water Level Accuracy*	Typical error: ±0.075% FS, 0.3 cm (0.01 ft) water Maximum error: ±0.15% FS, 0.6 cm (0.02 ft) water
Resolution	<0.01 kPa (0.0015 psi)
Response Time	<1 second at a stable temperature
Stability (Drift)	0.1°C (0.18°F) per year
<b>Temperature (Water Level Sensors MX2001-0x-S and MX2001-0x-TI-S):</b>	
Operation Range	-20° to 50°C (-4° to 122°F)
Accuracy	±0.44°C from 0° to 50°C (±0.79°F from 32° to 122°F)
Resolution	0.1°C at 25°C (0.18°F at 77°F)
Response Time (90%)	5 minutes in water (typical)
Stability (Drift)	0.1°C (0.18°F) 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. Hobo is a registered trademark of Onset Computer Corporation. Temperature response time: Cables pack Cable ties Screws and spacers Six AA lithium batteries (RX2103 battery-powered station) Battery pack (RX2104 solar-powered station)
Contents	Cables pack Cable ties Screws and spacers Six AA lithium batteries (RX2103 battery-powered station) Battery pack (RX2104 solar-powered station)
Ideal For	Professional
Brand	Onset H20
Onset Product Series	RX
Typical applications	Environmental (Outdoor), Field Research, Water Quality, Weather Monitoring
Measurements	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