

RX2100-WL

MicroRX Water Level Station

Requires water level sensor(s)

Award-winning cellular, remote water level monitoring solution for dam sites, stormwater, floodwater, irrigation, hydrologic, and environmental applications.

Important Information

Product needs water level sensor. Requires an RX data plan to access LI-COR Cloud software platform, which must be renewed annually. Learn more about LI-COR Cloud. Not compatible with HOBOnet wireless sensors.



Compatible with
LI-COR Cloud[®] IoT Platform



Supported Measurements

Absolute Pressure, Barometric Pressure, Evapotranspiration, Leaf Wetness, Light Intensity, PAR, Pulse Input, Rainfall, Relative Humidity, Remote Water Level Monitoring, Soil Moisture, Temperature, Water Flow, Water Level, Wind

Features

- Station-side alarms for water flow and accumulated rainfall triggered at time of measurement
- Non-vented ceramic water level sensor with a choice of four ranges
- Interchangeable, Kevlar-reinforced water level sensor cables
- Integrated barometric pressure sensor
- Compact IP66/NEMA 4X enclosure
- Built-in LCD confirms proper setup and operation
- Two power options:
 - Integrated 1.7 W solar panel with rechargeable battery pack
 - 5 W and 15 W external solar panels can be added (RX2104 only)
 - User-replaceable AA lithium batteries
- Inputs for five plug-and-play sensors
- Up to 10-minute connections rates via 4G cellular data plans
- Cloud-based monitoring and data access through HOBOLink
- Available with stainless-steel or titanium sensor ends
- 3-point NIST-traceable calibration certificate included for the water pressure sensor

What's in the box

Contact Us

Sales (8am to 5pm ET, Monday through Friday)

- Email sales@onsetcomp.com
- Call 1-508-759-9500
- In U.S. toll free 1-800-564-4377
- Fax 1-508-759-9100

Onset Computer Corporation
470 MacArthur Boulevard
Bourne, MA 02532

Technical Support (8am to 5pm ET, Monday through Friday)

- Contact Product Support www.onsetcomp.com/support/contact
- Call 1-508-759-9500
- In U.S. toll free 1-877-564-4377

MicroRX Water Level Station (RX2100-WL) Specifications

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-xW) can be used in place of integrated solar panel RX2103 Battery Life: Battery life with daily connections: <ul style="list-style-type: none">• RX2103: 1 year with 2 minute logging Battery life with hourly connections and 1 minute logging: <ul style="list-style-type: none">• RX2103: 2 months Note: Deployments in areas with weak cellular strength could reduce battery life. RX2104 Battery Life: Typical 3–5 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: <ul style="list-style-type: none">• 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 panels: <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• RX2104: 2 months
Battery Life	
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

GSM/GPRS/EDGE: Quad band
850/900/1800/1900 MHz
UMTS/HSPA+: Seven band
800/850/900/1800/1900/2100 MHz
LTE: Twelve Band
700/800/850/900/1800/1900/2100/2600 MHz

Antenna

4G LTE

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The CE Marking identifies this product as complying with all relevant directives in the European Union (EU)

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FCC ID QIPPLS62-W, IC ID:7830A-PLS62W

**Water Level Sensor:****Pressure (Absolute) And Water Level Measurements MX2001-01-SS-S and MX2001-01-Ti-S:**

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

Pressure (Absolute) And Water Level Measurements MX2001-02-SS-S:

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 (0.1 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

Pressure (Absolute) And Water Level Measurements MX2001-03-SS-S:

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: $\pm 0.05\%$ FS, 3.8 cm (0.125 ft) water Maximum error: $\pm 0.1\%$ FS, 7.6 cm (0.25 ft) water
Raw Pressure Accuracy**	$\pm 0.3\%$ FS, 2.55 kPa (0.37 psi) maximum error
Resolution	< 0.085 kPa (0.012 psi), 0.87 cm (0.028 ft) water
Pressure Response Time (90%***)	< 1 second at a stable temperature

Pressure (Absolute) And Water Level Measurements MX2001-04-SS-S and MX2001-04-Ti-S:

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: $\pm 0.075\%$ FS, 0.3 cm (0.01 ft) water Maximum error: $\pm 0.15\%$ FS, 0.6 cm (0.02 ft) water
Raw Pressure Accuracy**	$\pm 0.3\%$ 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

Barometric Pressure (RX2103 and RX2104 station):

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 $\pm 0.5\%$ FS
Water Level Accuracy*	Typical error: $\pm 0.075\%$ FS, 0.3 cm (0.01 ft) water Maximum error: $\pm 0.15\%$ 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)	< 0.01 kPa (0.0015 psi) per year

Temperature (Water Level Sensors MX2001-0x-SS-S and MX2001-0x-Ti-S):

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.

Measurement accuracy also depends on temperature response time.