



RXMOD-W1

Water Level Sensor Module for RX3000

The RX3000 Water Level Sensor Module (RXMOD-W1) offers users the ability to monitor water level, pressure, and temperature, as well as barometric pressure, with the HOBO RX3000 Remote Monitoring Station. It is configured through HOBOLink, Onset's cloud-based software. For water level applications, a HOBO RX3000 station, water level sensor cable (CABLE-RWLMOD-XXX), and water level sensor (MX2001-0X-XX-S) are required.



Key Advantages:

- Integrated barometric pressure sensor
- Plug-and-play remote water level and flow monitoring



RXMOD-W1 Specifications

Barometric Pressure

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)	<0.01 kPa (0.0015 psi) per year

Water level system accuracy is the sum of the barometric accuracy (above) and the water level sensor accuracy (below).

Pressure (Absolute) and Water Level Measurements MX2001-01-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 40C (32 to 104F)
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-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 40C (32 to 104F)
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-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 40C (32 to 104F)
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	<0.085 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-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 40C (32 to 104F)

Burst Pressure 310 kPa (45 psia) or 18 m (60 ft) depth

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

Raw Pressure Accuracy** 0.3% FS, 0.43 kPa (0.063 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

Water Level Sensor and Cable

Dimensions Sensor (MX2001-0x-S and MX2001-0x-Ti-S): 2.54 cm (1.0 inches) diameter, 9.91 cm (3.9 inches) length
Cable (CABLE-RWL-xxx): 0.47 cm \pm 0.03 (0.185 inches \pm 0.01) diameter, 0.2 to 400 m (0.65 to 1,312 ft) length
Note: The length of the water level logger cable can vary -0% to +3% +10 cm (3.9 inches) from the length ordered.

Weight Stainless sensor (MX2001-0x-S): Approximately 106 g (3.74 oz) in air; approximately 53.9 g (1.9 oz) in fresh water
Titanium sensor (MX2001-0x-Ti-S): Approximately 80 g (2.83 oz) in air; approximately 37 g (1.3 oz) in fresh water
Cable (CABLE-RWL-XXX): 39 g (1.38 oz) per 1 meter (3.28 ft)

Materials Stainless sensor (MX2001-0x-S): Acetal housing, Viton and Buna-N O-rings, ceramic sensor in stainless steel end cap
Titanium sensor (MX2001-0x-Ti-S): Acetal housing, Viton and Buna-N O-rings, ceramic sensor in Titanium end cap
Cable (CABLE-RWL-XXX): Polycarbonate end cap, PVC end cap, polycarbonate collar nut, Viton O-rings, polyurethane jacket

* Water Level Accuracy: With accurate reference water level measurement, known water density, and a stable temperature environment.

** 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.