



HOBO® U20-001-03 Data Logger

250-Foot Depth Water Level Data Logger

The HOBO water level data logger features high accuracy at a great price and ease-of-use, with no cumbersome vent tubes or desiccants to maintain. This data logger is ideal for recording water levels and temperatures in shallow wells, streams, lakes and freshwater wetlands.



Supported Measurements:

Absolute Pressure, Barometric Pressure, Temperature and Water Level

Key Advantages:

- Lightning protection - no long signal wires, and electronics are shielded in stainless steel housing for use in freshwater (see the Water Level logger sensor location drawing)
- HOBOWare Pro software provides easy conversion to accurate water level reading, fully compensated for barometric pressure (see demo) temperature, and water density.
- Multiple-rate sampling (see demo) allows faster sampling at critical times such as when pumping starts or stops.
- Available in 4 depth ranges
- Ideal for use in wells, streams, lakes, wetlands and tidal areas
- No-vent-tube design for easy reliable deployment
- Available in stainless and titanium versions
- Durable ceramic pressure sensor
- 3-point NIST-traceable calibration certificate included

HOBO U20-001-03 Data Logger Specifications

Pressure and Water Level Measurements U20-001-03 and U20-001-03-TI

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 1200 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; measurement accuracy also depends on temperature response time

Temperature Measurements (All Models)

Operation Range -20° to 50° C (-4° to 122° F)

Accuracy $\pm 0.44^{\circ}$ C from 0° to 50° C ($\pm 0.79^{\circ}$ F from 32° to 122° F), see Plot A in manual

Resolution 0.10° C at 25° C (0.18° F at 77° F), see Plot A in manual

Response Time (90%) 5 minutes in water (typical)

Stability (Drift) 0.1° C (0.18° F) per year

Logger

Real-time Clock ± 1 minute per month 0° to 50° C (32° to 122° F)

Battery 2/3 AA, 3.6 Volt lithium, factory-replaceable

Battery Life (Typical Use) 5 years with 1 minute or greater logging interval

Memory (Non-volatile) 64K bytes memory (approx. 21,700 pressure and temperature samples)

Weight Stainless steel models: approximately 210 g (7.4 oz)
Titanium models: approximately 140 g (4.8 oz)

Dimensions 2.46 cm (0.97 inches) diameter, 15 cm (5.9 inches) length; mounting hole 6.3 mm (0.25 inches) diameter

Wetted Materials 316 stainless steel, Viton® o-rings, acetyl cap, ceramic sensor

Logging Interval Fixed-rate or multiple logging intervals, with up to 8 user-defined logging intervals and durations; logging intervals from 1 second to 18 hours. Refer to the HOBOWare software manual.

Launch Modes Immediate start and delayed start

Offload Modes Offload while logging; stop and offload

Battery Indication Battery voltage can be viewed in status screen and optionally logged in datafile. Low battery indication in datafile.

Environmental Rating IP68

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

* Water Level Accuracy: With accurate reference water level measurement, known water density, accurate Barometric Compensation Assistant data, 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 10 minutes in water to achieve full temperature compensation of the pressure sensor. Maximum error due to rapid thermal changes is approximately 0.5%.



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