



# HOBO U20-001-03 Fresh Water Level Data Logger (0-76m)

## Product Images



## Description

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

## Key Features


- 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 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.

**Supports the following measurements:** Absolute Pressure, Barometric Pressure, Temperature and Water Level

**IMPORTANT** Requires HOBOWare Pro software and either a U-DTW-1 Waterproof Shuttle or the Base-U-4 Optic USB Base Station for configuration and data offload. See Connectivity Options below.

# Additional Information

Country of Manufacture	United States										
Explanation	<div>Pressure and Water Level Measurements U20-001-03 and U20-001-03-Ti</div> <div><div>Operation Range</div><div>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</div></div> <div><div>Factory Calibrated Range</div><div>69 to 850 kPa (10 to 123.3 psia), 0° to 40°C (32° to 104°F)</div></div> <div><div>Burst Pressure</div><div>1200 kPa (174 psia) or 112 m (368 ft) depth</div></div> <div><div>Water Level Accuracy*</div><div>Typical error: ±0.05% FS, 3.8 cm (0.125 ft) water Maximum error: ±0.1% FS, 7.6 cm (0.25 ft) water</div></div> <div><div>Raw Pressure Accuracy**</div><div>±0.3% FS, 2.55 kPa (0.37 psi) maximum error</div></div> <div><div>Resolution</div><div>&lt;0.085 kPa (0.012 psi), 0.87 cm (0.028 ft) water</div></div> <div><div>Pressure Response Time (90%***)</div><div>&lt;1 second; measurement accuracy also depends on temperature response time</div></div> <div>Temperature Measurements (All Models)</div> <div><div>Operation Range</div><div>-20° to 50°C (-4° to 122°F)</div></div> <div><div>Accuracy</div><div>±0.44°C from 0° to 50°C (±0.79°F from 32° to 122°F), see Plot A in manual</div></div> <div><div>Resolution</div><div>0.10°C at 25°C (0.18°F at 77°F), see Plot A in manual</div></div> <div><div>Response Time (90%)</div><div>5 minutes in water (typical)</div></div> <div><div>Stability (Drift)</div><div>0.1°C (0.18°F) per year</div></div> <div>Logger</div> <div><div>Real-time Clock</div><div>± 1 minute per month 0° to 50°C (32° to 122°F)</div></div> <div><div>Battery</div><div>2/3 AA, 3.6 Volt lithium, factory-replaceable</div></div> <div><div>Battery Life (Typical Use)</div><div>5 years with 1 minute or greater logging interval</div></div> <div><div>Memory (Non-volatile)</div><div>64K bytes memory (approx. 21,700 pressure and temperature samples)</div></div> <div><div>Weight</div><div>Stainless steel models: approximately 210 g (7.4 oz) Titanium models: approximately 140 g (4.8 oz)</div></div> <div><div>Dimensions</div><div>2.46 cm (0.97 inches) diameter, 15 cm (5.9 inches) length; mounting hole 6.3 mm (0.25 inches) diameter</div></div> <div><div>Wetted Materials</div><div>316 stainless steel, Viton® o-rings, acetyl cap, ceramic sensor</div></div> <div><div>Logging Interval</div><div>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.</div></div> <div><div>Launch Modes</div><div>Immediate start and delayed start</div></div> <div><div>Offload Modes</div><div>Offload while logging; stop and offload</div></div> <div><div>Battery Indication</div><div>Battery voltage can be viewed in status screen and optionally logged in datafile. Low battery indication in datafile.</div></div> <div><div>Environmental Rating</div><div>IP68</div></div> <div><div></div><div>The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).</div></div> <div><div>* Water Level Accuracy: With accurate reference water level measurement, known water density, accurate Barometric Compensation Assistant data, and a stable temperature environment.</div><div>** Raw Pressure Accuracy: Absolute pressure sensor accuracy includes all sensor drift, temperature, and hysteresis-induced errors.</div><div>*** 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%.</div></div> <tr><td>Ideal For</td><td>Professional</td></tr> <tr><td>Brand</td><td>Onset HOBO</td></tr> <tr><td>Onset Product Series</td><td>U20</td></tr> <tr><td>Typical applications</td><td>Environmental (Outdoor), Field Research, Water Quality</td></tr> <tr><td>Measurements</td><td>Barometric Pressure, Pressure, Temperature, Water Level</td></tr>	Ideal For	Professional	Brand	Onset HOBO	Onset Product Series	U20	Typical applications	Environmental (Outdoor), Field Research, Water Quality	Measurements	Barometric Pressure, Pressure, Temperature, Water Level
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# Additional Options

Connectivity Options	HOBO Universal Optic USB Base Station Base-U-4 (includes Couplers)
	Waterproof Optic Data Shuttle U-DTW-1 (requires HOBOWare Pro)
HOBOWare Pro Software Options	HOBOWare Pro on USB Drive (USB Cable Included)
	HOBOWare Pro on CD (USB Cable Included)
	HOBOWare Pro - Download Only (USB Cable NOT Included)
Well Cap for Mounting HOBO Loggers in Wells	WELL-CAP-01