



# HOBO U20L-04 Water Level Data logger (0-4m)

## Product Images



## Short Description

An accurate, low cost data logger designed to record water level fully compensated for barometric pressure in wells, streams, lakes etc.

## Description

The HOBO U20L-04 is a low-cost, research-grade water level data logger for continuously measuring water level and temperature in a wide range of underwater environments. It features 0.1% measurement accuracy, a polypropylene housing for use in both fresh and salt water, and a non-vented design for convenient and

hassle-free deployment.

## Key Features

- Ideal for use in both fresh and saltwater environments, including wells, streams, lakes, wetlands, and tidal areas
- For depths up to 4 metres (13 feet)
- Durable ceramic pressure sensor withstands freezing  
HOBOWare Pro software provides easy conversion to accurate water level reading, fully compensated for barometric pressure, temperature, and water density in wells, streams, lakes etc
- Can also be used in air to record barometric pressure
- The non-vented design eliminates installation/maintenance issues and errors associated with vent tubes, desiccant maintenance, water ingress etc.

**Measures** 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	<b>Pressure (Absolute) and Water Level Measurements U20L-04</b>																								
	<table border="0"> <tr> <td><b>Operation Range</b></td> <td>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</td> </tr> <tr> <td><b>Factory Calibrated Range</b></td> <td>69 to 145 kPa (10 to 21 psia), 0° to 40°C (32° to 104°F)</td> </tr> <tr> <td><b>Burst Pressure</b></td> <td>310 kPa (45 psia) or 18 m (60 ft) depth</td> </tr> <tr> <td><b>Water Level Accuracy*</b></td> <td>Typical error: ±0.1% FS, 0.4 cm (0.013 ft) water Maximum error: ±0.2% FS, 0.8 cm (0.026 ft) water</td> </tr> <tr> <td><b>Raw Pressure Accuracy**</b></td> <td>±0.3% FS, 0.43 kPa (0.063 psi) maximum error</td> </tr> <tr> <td><b>Resolution</b></td> <td>&lt;0.014 kPa (0.002 psi), 0.14 cm (0.005 ft) water</td> </tr> <tr> <td><b>Pressure Response Time (90%)*</b></td> <td>&lt;1 second at a stable temperature; measurement accuracy also depends on temperature response time</td> </tr> </table>	<b>Operation Range</b>	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	<b>Factory Calibrated Range</b>	69 to 145 kPa (10 to 21 psia), 0° to 40°C (32° to 104°F)	<b>Burst Pressure</b>	310 kPa (45 psia) or 18 m (60 ft) depth	<b>Water Level Accuracy*</b>	Typical error: ±0.1% FS, 0.4 cm (0.013 ft) water Maximum error: ±0.2% FS, 0.8 cm (0.026 ft) water	<b>Raw Pressure Accuracy**</b>	±0.3% FS, 0.43 kPa (0.063 psi) maximum error	<b>Resolution</b>	<0.014 kPa (0.002 psi), 0.14 cm (0.005 ft) water	<b>Pressure Response Time (90%)*</b>	<1 second at a stable temperature; measurement accuracy also depends on temperature response time										
	<b>Operation Range</b>	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																							
	<b>Factory Calibrated Range</b>	69 to 145 kPa (10 to 21 psia), 0° to 40°C (32° to 104°F)																							
	<b>Burst Pressure</b>	310 kPa (45 psia) or 18 m (60 ft) depth																							
	<b>Water Level Accuracy*</b>	Typical error: ±0.1% FS, 0.4 cm (0.013 ft) water Maximum error: ±0.2% FS, 0.8 cm (0.026 ft) water																							
	<b>Raw Pressure Accuracy**</b>	±0.3% FS, 0.43 kPa (0.063 psi) maximum error																							
	<b>Resolution</b>	<0.014 kPa (0.002 psi), 0.14 cm (0.005 ft) water																							
	<b>Pressure Response Time (90%)*</b>	<1 second at a stable temperature; measurement accuracy also depends on temperature response time																							
	<b>Temperature Measurements</b>																								
	<table border="0"> <tr> <td><b>Operation Range</b></td> <td>-20° to 50°C (-4° to 122°F)</td> </tr> <tr> <td><b>Accuracy</b></td> <td>±0.44°C from 0° to 50°C (±0.79°F from 32° to 122°F), see Plot A in manual</td> </tr> <tr> <td><b>Resolution</b></td> <td>0.10°C at 25°C (0.18°F at 77°F), see Plot A in manual</td> </tr> <tr> <td><b>Response Time (90%)</b></td> <td>10 minutes in water (typical)</td> </tr> <tr> <td><b>Stability (Drift)</b></td> <td>0.1°C (0.18°F) per year</td> </tr> </table>	<b>Operation Range</b>	-20° to 50°C (-4° to 122°F)	<b>Accuracy</b>	±0.44°C from 0° to 50°C (±0.79°F from 32° to 122°F), see Plot A in manual	<b>Resolution</b>	0.10°C at 25°C (0.18°F at 77°F), see Plot A in manual	<b>Response Time (90%)</b>	10 minutes in water (typical)	<b>Stability (Drift)</b>	0.1°C (0.18°F) per year														
	<b>Operation Range</b>	-20° to 50°C (-4° to 122°F)																							
	<b>Accuracy</b>	±0.44°C from 0° to 50°C (±0.79°F from 32° to 122°F), see Plot A in manual																							
	<b>Resolution</b>	0.10°C at 25°C (0.18°F at 77°F), see Plot A in manual																							
	<b>Response Time (90%)</b>	10 minutes in water (typical)																							
	<b>Stability (Drift)</b>	0.1°C (0.18°F) per year																							
	<b>Logger</b>																								
	<table border="0"> <tr> <td><b>Real-time Clock</b></td> <td>±1 minute per month 0° to 50°C (32° to 122°F)</td> </tr> <tr> <td><b>Battery</b></td> <td>2/3 AA, 3.6 Volt lithium, factory-replaceable</td> </tr> <tr> <td><b>Battery Life (Typical Use)</b></td> <td>5 years with 1 minute or greater logging interval</td> </tr> <tr> <td><b>Memory (Non-volatile)</b></td> <td>64K bytes memory (approx. 21,700 pressure and temperature samples)</td> </tr> <tr> <td><b>Weight</b></td> <td>Approximately 154 g (5.43 oz) in air Approximately 53.9 g (1.9 oz) in fresh water</td> </tr> <tr> <td><b>Dimensions</b></td> <td>3.18 cm (1.25 inches) diameter, 15.24 cm (6.0 inches) length; mounting hole 6.3 mm (0.25 inches) diameter</td> </tr> <tr> <td><b>Wetted Materials</b></td> <td>Polypropylene housing and lanyard; Viton and Buna-N O-rings; ceramic sensor in acetyl end cap; stainless steel screws suitable for saltwater</td> </tr> <tr> <td><b>Logging Interval</b></td> <td>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 <i>HOBOWare User's Guide</i> for details.</td> </tr> <tr> <td><b>Launch Modes</b></td> <td>Immediate start and delayed start</td> </tr> <tr> <td><b>Offload Modes</b></td> <td>Offload while logging; stop and offload</td> </tr> <tr> <td><b>Battery Indication</b></td> <td>Battery voltage can be viewed in status screen and optionally logged in datafile. Low battery indication in datafile.</td> </tr> <tr> <td><b>Environmental Rating:</b></td> <td>IP68</td> </tr> </table>	<b>Real-time Clock</b>	±1 minute per month 0° to 50°C (32° to 122°F)	<b>Battery</b>	2/3 AA, 3.6 Volt lithium, factory-replaceable	<b>Battery Life (Typical Use)</b>	5 years with 1 minute or greater logging interval	<b>Memory (Non-volatile)</b>	64K bytes memory (approx. 21,700 pressure and temperature samples)	<b>Weight</b>	Approximately 154 g (5.43 oz) in air Approximately 53.9 g (1.9 oz) in fresh water	<b>Dimensions</b>	3.18 cm (1.25 inches) diameter, 15.24 cm (6.0 inches) length; mounting hole 6.3 mm (0.25 inches) diameter	<b>Wetted Materials</b>	Polypropylene housing and lanyard; Viton and Buna-N O-rings; ceramic sensor in acetyl end cap; stainless steel screws suitable for saltwater	<b>Logging Interval</b>	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 <i>HOBOWare User's Guide</i> for details.	<b>Launch Modes</b>	Immediate start and delayed start	<b>Offload Modes</b>	Offload while logging; stop and offload	<b>Battery Indication</b>	Battery voltage can be viewed in status screen and optionally logged in datafile. Low battery indication in datafile.	<b>Environmental Rating:</b>	IP68
	<b>Real-time Clock</b>	±1 minute per month 0° to 50°C (32° to 122°F)																							
	<b>Battery</b>	2/3 AA, 3.6 Volt lithium, factory-replaceable																							
	<b>Battery Life (Typical Use)</b>	5 years with 1 minute or greater logging interval																							
	<b>Memory (Non-volatile)</b>	64K bytes memory (approx. 21,700 pressure and temperature samples)																							
	<b>Weight</b>	Approximately 154 g (5.43 oz) in air Approximately 53.9 g (1.9 oz) in fresh water																							
	<b>Dimensions</b>	3.18 cm (1.25 inches) diameter, 15.24 cm (6.0 inches) length; mounting hole 6.3 mm (0.25 inches) diameter																							
	<b>Wetted Materials</b>	Polypropylene housing and lanyard; Viton and Buna-N O-rings; ceramic sensor in acetyl end cap; stainless steel screws suitable for saltwater																							
	<b>Logging Interval</b>	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 <i>HOBOWare User's Guide</i> for details.																							
	<b>Launch Modes</b>	Immediate start and delayed start																							
<b>Offload Modes</b>	Offload while logging; stop and offload																								
<b>Battery Indication</b>	Battery voltage can be viewed in status screen and optionally logged in datafile. Low battery indication in datafile.																								
<b>Environmental Rating:</b>	IP68																								
CE Compliant	The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).																								
	<p>* Water Level Accuracy: With accurate reference water level measurement, known water density, accurate Barometric Compensation Assistant data, and a stable temperature environment.</p> <p>** Raw Pressure Accuracy: Absolute pressure sensor accuracy includes all sensor drift, temperature, and hysteresis-induced errors.</p> <p>*** Changes in Temperature: Allow 20 minutes in water to achieve full temperature compensation of the pressure sensor. Maximum error due to rapid thermal changes is approximately 0.5%.</p>																								
Ideal For	Professional																								
Brand	Onset HOBO																								
Channel(s)	2																								
Onset Product Series	U20L																								
Typical applications	Environmental (Outdoor), Field Research, Water Quality																								
Measurements	Barometric Pressure, Pressure, Temperature, Water Level																								

## Additional Options

---

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