

W-CTD-01 • W-CTD-02 • W-CTD-03 • W-CTD-04



## CTD Sensor

Conductivity/Temperature/Depth sensor for use with HOBO MX800 Series Water Loggers. Options available for 13, 30, 100 or 250 feet. For use in a wide range of underwater environments; freshwater or saltwater.

### Important Information

Requires a HOBO MX801 or MX802 Data Logger, the HOBObconnect app, and a compatible mobile device or Windows computer. System requirements for the app can be found at the bottom of our HOBObconnect software page.

## Supported Measurements

Conductivity/Salinity, Water Level, Water Temperature

## Features

- 4-electrode conductivity sensor provides wide measurement range for monitoring freshwater or saltwater
- Conductivity sensor is centrally located to minimize effects from stilling wells or protective guards
- Durable ceramic water level sensor, located in the sensor tip for accurate measurement of shallow water levels
- Get water level directly with the MX802, no need for post-processing
- 1" diameter for use in narrow wells (with cable to MX802 above the well)
- Temperature sensor placement near the sensor tip for fast response time
- Specially treated stainless steel holds up in saltwater

## What's in the box

- CTD Sensor

## Contact Us

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

- Email [sales@onsetcomp.com](mailto: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](http://www.onsetcomp.com/support/contact)
- Call 1-508-759-9500
- In U.S. toll free 1-877-564-4377

## CTD Sensor (W-CTD-xx) Specifications

### Conductivity Measurements

<b>Measurement Range</b>	Electrical conductivity and specific conductance: 0 to 100,000 $\mu\text{S}/\text{cm}$ Salinity using PSS-78: 2 to 42 PSU Total Dissolved Solids (TDS): 0 to 100,000 mg/L
<b>Calibrated Range</b>	Electrical conductivity: 50 to 80,000 $\mu\text{S}/\text{cm}$
<b>Accuracy</b>	5° to 35°C (41° to 95°F) Conductivity: +/-2% or 15 $\mu\text{S}/\text{cm}$ whichever is greater Salinity: +/-2% of reading or 0.1 PSU, whichever is greater
<b>Resolution</b>	Conductivity: 0.1 $\mu\text{S}/\text{cm}$ from 0 to 1,000 $\mu\text{S}/\text{cm}$ 1 $\mu\text{S}/\text{cm}$ from 1,000 to 10,000 $\mu\text{S}/\text{cm}$ 10 $\mu\text{S}/\text{cm}$ from 10,000 to 100,000 $\mu\text{S}/\text{cm}$ TDS: 0.1 mg/L Salinity: 0.01 PSU
<b>Response Time</b>	1 second to 90% at a stable temperature

### Absolute Pressure and Water Level Measurements W-CTD-01

<b>Range</b>	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
<b>Factory Calibrated Range</b>	69 to 207 kPa (10 to 30 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: $\pm 0.05\%$ FS, 0.5 cm (0.015 ft) water Maximum error: $\pm 0.1\%$ FS, 1.0 cm (0.03 ft) water
<b>Raw Pressure Accuracy**</b>	$\pm 0.3\%$ FS, 0.62 kPa (0.09 psi) maximum error
<b>Resolution</b>	<0.02 kPa (0.003 psi), 0.21 cm (0.007 ft) water
<b>Pressure Response Time***</b>	<1 second to 90% at a stable temperature

### Absolute Pressure and Water Level Measurements W-CTD-02

<b>Range</b>	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
<b>Factory Calibrated Range</b>	69 to 400 kPa (10 to 58 psia), 0° to 40°C (32° to 104°F)
<b>Burst Pressure</b>	500 kPa (72.5 psia) or 40.8 m (134 ft) depth
<b>Water Level Accuracy*</b>	Typical error: $\pm 0.05\%$ FS, 1.5 cm (0.05 ft) water Maximum error: $\pm 0.1\%$ FS, 3.0 cm (0.1 ft) water
<b>Raw Pressure Accuracy**</b>	$\pm 0.3\%$ FS, 1.20 kPa (0.17 psi) maximum error
<b>Resolution</b>	<0.04 kPa (0.006 psi), 0.41 cm (0.013 ft) water
<b>Pressure Response Time***</b>	<1 second to 90% at a stable temperature

### Absolute Pressure and Water Level Measurements W-CTD-03

<b>Range</b>	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
<b>Factory Calibrated Range</b>	69 to 850 kPa (10 to 123.3 psia), 0° to 40°C (32° to 104°F)
<b>Burst Pressure</b>	1,200 kPa (174 psia) or 112 m (368 ft) depth
<b>Water Level Accuracy*</b>	Typical error: ±0.05% FS, 3.8 cm (0.125 ft) water Maximum error: ±0.1% FS, 7.6 cm (0.25 ft) water
<b>Raw Pressure Accuracy**</b>	±0.3% FS, 2.55 kPa (0.37 psi) maximum error
<b>Resolution</b>	<0.085 kPa (0.012 psi), 0.87 cm (0.028 ft) water
<b>Pressure Response Time***</b>	<1 second to 90% at a stable temperature

### Absolute Pressure and Water Level Measurements W-CTD-04

<b>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: ±0.075% FS, 0.3 cm (0.01 ft) water Maximum error: : ±0.15% FS, 0.6 cm (0.02 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***</b>	<1 second to 90% at a stable temperature

### Temperature Measurements (All Models)

<b>Range</b>	-20° to 50°C (-40° to 122°F), non-freezing water
<b>Accuracy</b>	±0.15°C (±0.27°F) from 0° to 50°C (32° to 122°F)
<b>Resolution</b>	0.01°C at 25°C (0.018°F at 77°F)
<b>Response Time</b>	3 minutes to 90% in water (typical)
<b>Drift</b>	<0.1°C (0.18°F) per year

### Sensor

<b>Dimensions</b>	2.5 cm (1 inch) diameter, 18.7 cm (7.37 inches) length
<b>Weight</b>	177g (6.24 oz)
<b>Wetted Materials</b>	Passivated 316 Stainless steel housing rated for use in saltwater, Viton and Buna-N O-rings, PET sensor connector Depth sensor: ceramic Conductivity sensor: PET, platinum plating on electrodes Note: Sensor should be mounted so that it is not in contact with other metals
<b>Environmental Rating</b>	IP68; Waterproof to pressure sensor burst pressure rating



\* 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 CTD 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.