

# Thermocline Sensor

Model PS-2151

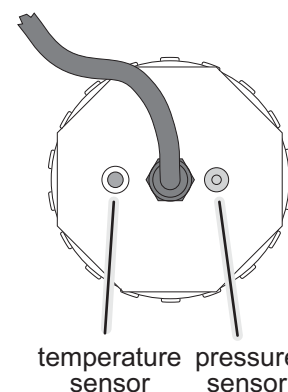


Equipment Included	Replacement Part
Thermocline Sensor Head with 10 m cable	003-08790
Thermocline Sensor Amplifier	003-08736

Additional Equipment Required	Model Number
PASPORT™ interface	see PASCO catalog
DataStudio® version 1.9 or higher	see PASCO catalog

that plugs into the amplifier box. The amplifier box, in turn, plugs into your PASPORT interface.

The depth sensor is a gauge-type pressure sensor with a stainless steel housing and a stainless steel diaphragm. The entire sensor head is designed to resist the corrosive effects of salt water.



## Description

The PASCO Model PS-2151 Thermocline Sensor allows students to study the relationship between depth and temperature in a body of water.

The sensor head has two sensors built into a watertight housing: a depth sensor and a temperature sensor. It has a 10 m cable with a connector

## Operation

Connect the Thermocline Sensor head to the amplifier box. Connect the amplifier box to a PASPORT interface. If you will use a computer to collect data, connect the interface to the computer and start DataStudio.

Start data recording and lower the sensor head into the water. The temperature sensor takes a few seconds to respond to changes in temperature, so lower the sensor head slowly. For the most accu-

rate temperature measurement at a particular depth, hold the sensor still and wait until the reading has stabilized.

You can also leave the sensor head in the water and record changes in depth and temperature over time.

## Calibration

Calibration is usually not necessary. The Thermocline Sensor is factory tested and calibrated. The depth-sensing element is calibrated for use in fresh water or saltwater, and you can select either of these calibrations in the software.

The reference pressure for the depth sensor is sealed into the PVC fitting. The barometric pressure at the time and location that the sensor was built is the reference pressure. If the local barometric pressure is different from the reference pressure, then a small offset error will occur; the depth reported by the sensor at the surface of the water will not be zero. In most cases this error is only a few centimeters and can be ignored. To remove the error, define a calculation in DataStudio to subtract the offset (see the DataStudio Help menu for instructions on using the calculator.)

## Specifications

Depth (Pressure) Sensor	
<b>Range</b>	0 to 34.6 feet (0 to 10.54 m)
<b>Absolute Accuracy*</b>	0.5 feet (0.15 m)
<b>Repeatability</b>	± 0.05% of full scale
<b>Resolution</b>	0.1 feet (0.03 m)
<b>Response Time (10% to 90%)**</b>	0.5 ms
<b>Temperature Compensation</b>	0 °C to 70 °C

\*Absolute accuracy after barometric pressure compensation. \*\*Maximum instantaneous transition: 0 to 34.5 feet (0 to 10.54 m).

Temperature Sensor	
<b>Range</b>	0 °C to 70 °C
<b>Absolute Accuracy</b>	±1.5 °C typical ± 0.6 °C at 25 °C
<b>Resolution</b>	0.05 °C
<b>Response Time (10% to 90%)</b>	10 s

## Technical Support

For assistance with any PASCO product, contact PASCO at:

Address: PASCO scientific  
10101 Foothills Blvd.  
Roseville, CA 95747-7100

Phone: (916) 786-3800  
(800) 772-8700

Fax: (916) 786-3292

Web: [www.pasco.com](http://www.pasco.com)

Email: [techsupp@pasco.com](mailto:techsupp@pasco.com)

## Copyright and Warranty Information

### Copyright Notice

The PASCO scientific 012-08734A *Thermocline Sensor Instruction Sheet* is copyrighted and all rights reserved. However, permission is granted to non-profit educational institutions for reproduction of any part of this manual, providing the reproductions are used only for their laboratories and are not sold for profit. Reproduction under any other circumstances, without the written consent of PASCO scientific, is prohibited.

### Limited Warranty

For a description of the product warranty, see the PASCO catalog.