

# **SENSUS PRO MANAGER**

**(for SENSUS or SENSUS PRO devices)**

## **User's Guide -- Windows**

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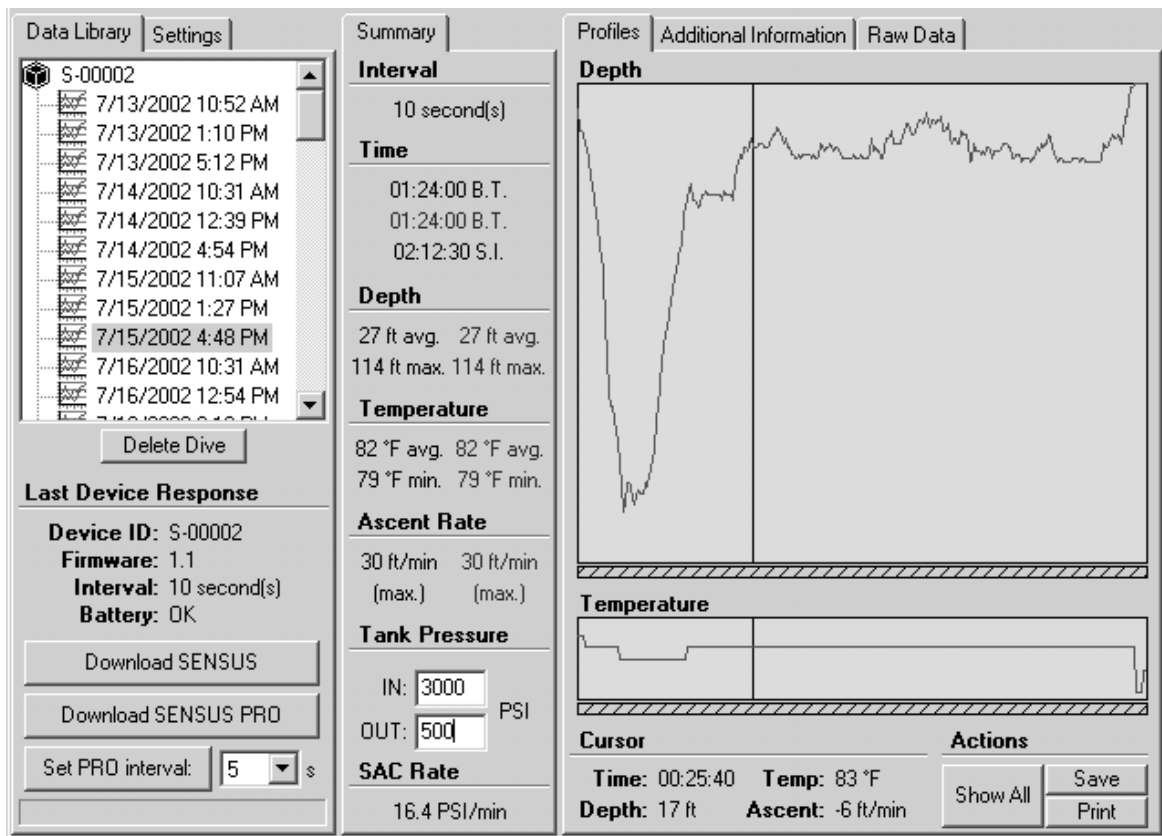
# 1.0 Introduction

The SENSUS PRO data recorder captures the time, depth, and temperature at regular time intervals. The unit begins recording whenever the pressure sensor detects a pressure equivalent to 4 feet (or more) of sea water, and stops recording 3 minutes after an ascent to less than 4 feet of sea water. The SENSUS PRO will record depths to 500 feet with an accuracy of  $\pm 1$  foot.

The SENSUS data recorder (original silver model) differs from the SENSUS PRO by activating at 3 feet, deactivating after 18 recorded data samples after an ascent to less than 3 feet, and recording to a maximum of 240 feet.

The SENSUS PRO MANAGER program downloads the data recorded by either SENSUS device and displays them for analysis. The program's screen (see the Figure below) consists of:

- 📁 The *Data Library/Settings* area occupying the left quarter of the screen
- 📁 The *Dive Summary* area in the middle of the screen
- 📁 The *Dive Display* area on the right half of the screen



↑  
*Data Library & Settings*

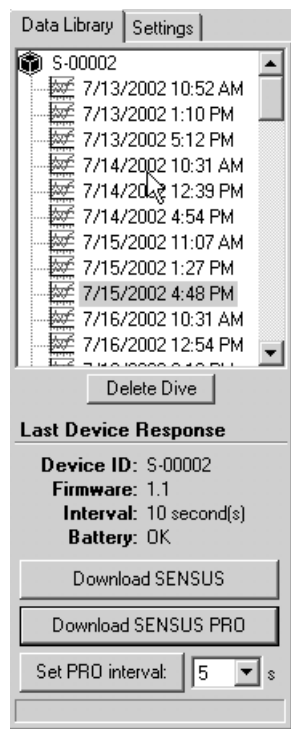
↑  
*Dive Summary*

↑  
*Dive Display Area*

Each of these areas will now be described in detail.

## 2.0 Data Library/Settings

### 2.1 Data Library







When you open the *Data Library* tab, this area of the screen appears as at left. The window shows the device serial number at the very top, next to the “black box” icon, followed by a list of recorded dives. If you don’t see a list of dives, double-clicking the serial number will expand the tree. If you have more than one SENSUS device, each will be listed by its unique serial number.

Each dive is labeled with a date/time stamp formatted according to your computer’s system preferences (M/D/Y, D/M/Y, etc.). The relative clock in the device is compared with your computer’s clock to determine precisely when the dives took place. [Note: If the dives occurred in a different time zone, you will have to indicate that in the “Additional Information” screen when doing a *Dive Display*, see later]. **HENCE, YOUR COMPUTER’S CLOCK MUST BE SET CORRECTLY.**

To select a dive for display, simply left-click on its label. This will highlight the label and load the dive’s data into the *Dive Summary* and *Dive Display* areas.

You may delete a highlighted dive by clicking on the “Delete Dive” button below the window. Once deleted, the dive cannot be restored.

Below this button you will find information about the last device that the program downloaded data from, including:





-  Device ID      Number imprinted on the device and permanently burned into its memory
-  Firmware      Version of the firmware (program) burned into the device’s microprocessor
-  Interval      Current recording interval
-  Battery      SENSUS PRO: exact battery voltage (3.0-3.1 v for a fresh battery; < 2.7 v may lead to corrupt data), SENSUS: OK/LOW indicator

### 2.2 Download/Programming Procedures

SENSUS PRO MANAGER is compatible with both the current SENSUS PRO device and its predecessor, the original silver SENSUS.

#### 2.2.1 SENSUS PRO Download and Sampling Interval






To download data from a SENSUS PRO device, click on “Download SENSUS PRO” and follow the prompts. Should you encounter any problems, make sure that:

-  The device is completely dry
-  The device is resting squarely on the cradle
-  The correct serial (COM) port is selected in the *Settings* tab (see next section)
-  The metal contacts on the device and cradle are clean

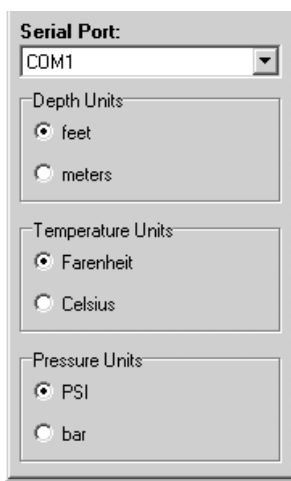
To change the recording interval on the SENSUS PRO, use the controls at the bottom of the screen. The factory default recording interval is 10 seconds, but you can change it to a value ranging from 1 second to 120 seconds by selecting a value from the scroll box, clicking on “Set PRO interval”, and following the prompts. (**Note: this feature works only with the SENSUS PRO. It does NOT work with the original SENSUS.**)

## 2.2.2 SENSUS (original silver model)

To download data from a SENSUS device, click on “Download SENSUS” and follow the prompts. Should you encounter any problems, make sure that:

-  No water has fallen into the download port or onto the download connector
-  The download cable is firmly plugged into the download port (you should feel it click into place)
-  The correct serial (COM) port is selected in the *Settings* tab (see next section)
-  **You ONLY plug/unplug the device when directed to do so by the software.**
-  **IMPORTANT NOTE: The original SENSUS should not be left connected to the download cable for extended periods. Doing so keeps the internal processor ‘awake’, and will reduce battery life. ALWAYS disconnect the cable after each download session.**

## 2.3 Settings

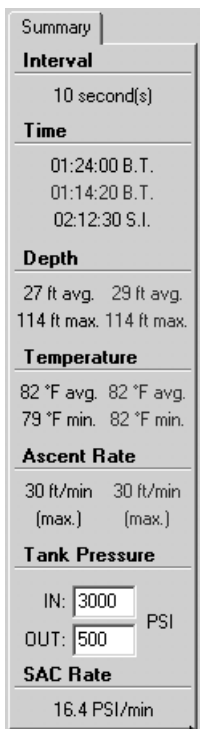


When you left-click the *Settings* tab this area of the screen appears as at left.








Make sure that you select the appropriate serial (COM) port for data download. On most systems COM1 or COM2 is used.

Also, choose whichever depth, temperature, and pressure units you prefer. These will be used in the other areas of the SENSUS PRO MANAGER screen. You may change units at any time during profile analysis, but the change will take effect only for the NEXT profile displayed.

## 3.0 Dive Summary

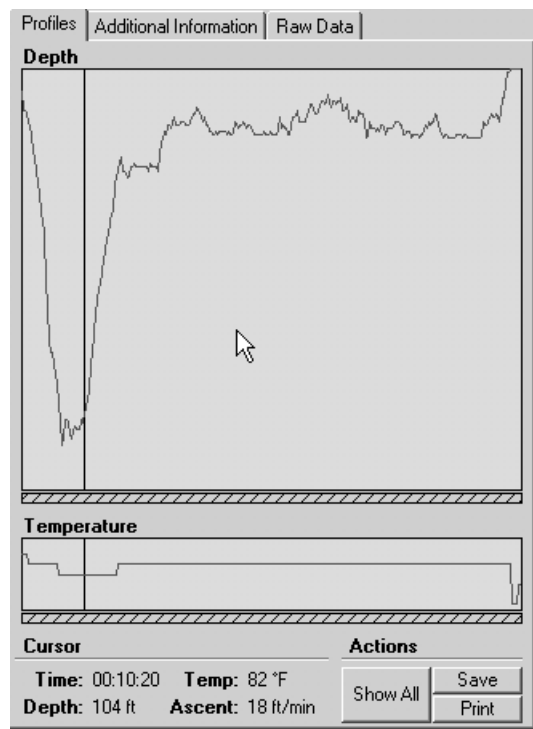


This area of the screen gives summary information about the selected dive. For details about “zooming” see the Dive Display section.

-  **Interval** Time interval between consecutive data samples.
-  **Time** Bottom time in HH:MM:SS for the entire dive (black)  
Bottom time in HH:MM:SS for the zoomed region (green)  
Surface interval (from end of previous dive) in HH:MM:SS
-  **Depth** Average and maximum depths for the entire dive (black)  
Average and maximum depths for the zoomed region (green)
-  **Temperature** Average and minimum temperatures for the entire dive (black)  
Average and minimum temperatures for the zoomed region (green)
-  **Ascent Rate** Maximum ascent rate for the entire dive (black)  
Maximum ascent rate for the zoomed region (green)
-  **Tank Pressure** Starting and ending tank pressures
-  **SAC Rate** Surface air consumption rate (tank pressure change per minute).  
*[calculated only if the tank pressures are specified]*

## 4.0 Dive Display

### 4.1 Profiles



To graphically display the depth and temperature profiles for the selected dive, left-click the *Profiles* tab. The upper window shows the depth as a function of time; the lower window shows temperature as a function of time.

Although scales are not shown, you can get precise information for any point in the profile by simply placing the mouse cursor there and examining the corresponding numbers (time, depth, temperature, and ascent rate) at the bottom of the screen. As you slide the cursor horizontally (the time axis), a black vertical line slides with it, indicating which point of the profile is being sampled.

By default, the entire dive is displayed. You may, however, “zoom in” on any portion of the dive for more detailed analysis. Do this as follows:

- 🖱️ Position the cursor at one edge of the desired range
- 🖱️ Depress and HOLD the left mouse button
- 🖱️ Drag the mouse cursor to the other edge of the desired range
- 🖱️ Release the left mouse button

The selected part of the profile will now fill the two display windows, and may be analyzed as before. To switch back to a display of the entire dive (“un-zoom”), either:

- 🖱️ Click on the “Show All” button at the bottom of the screen
- OR
- 🖱️ Right-click the mouse

To save the currently-displayed *Dive Summary* and *Dive Display* to an image file (.bmp), click on the “Save” button.

The screenshot shows a software interface with three tabs: Profiles, Additional Information, and Raw Data. The Raw Data tab is active. It displays a table of data with the following columns: Time (s), Depth (ft), Depth (m), Temp (F), and Temp (C). The data shows a descent from 7 feet at 0 seconds to 38 feet at 170 seconds, with temperature remaining constant at 83°F (28°C). Above the table are two buttons: 'Select All' and 'Copy'. The File ID is 0033414469 and the number of datapoints is 504.

Time (s)	Depth (ft)	Depth (m)	Temp (F)	Temp (C)
0	7	2	84	29
10	13	4	84	29
20	12	4	84	29
30	13	4	84	29
40	14	4	84	29
50	15	5	84	29
60	16	5	83	28
70	16	5	83	28
80	18	5	83	28
90	20	6	83	28
100	23	7	83	28
110	26	8	83	28
120	27	8	83	28
130	30	9	83	28
140	31	9	83	28
150	32	10	83	28
160	35	11	83	28
170	38	12	83	28

### 4.2 Raw Data

The raw data used for graphical profile display can be examined by clicking on the *Raw Data* tab. This displays all data captured by the device for the dive being examined.

To export some or all of the data to other programs for analysis you must first select the data. You can do this in the same way that you select data in most spreadsheets (click and SHIFT-click, or by dragging the cursor across the data while holding down the left mouse button). To choose all of the data, simply click on the “Select All” button.

The selected data can be copied to the clipboard by clicking on the “Copy” button at the upper right of the screen. It can then be pasted into other applications (spreadsheets, documents, etc.).

## 4.3 Additional Information

For each dive, you can add some basic information, such as location, dive buddies, altitude, time zone, fresh or salt water, and any other descriptive comments.

The Time Zone scroll box is used to adjust the label (“timestamp”) of the dive being examined. To correct the timestamp of a dive conducted in a different time zone from that of your computer, adjust the Time Zone value.

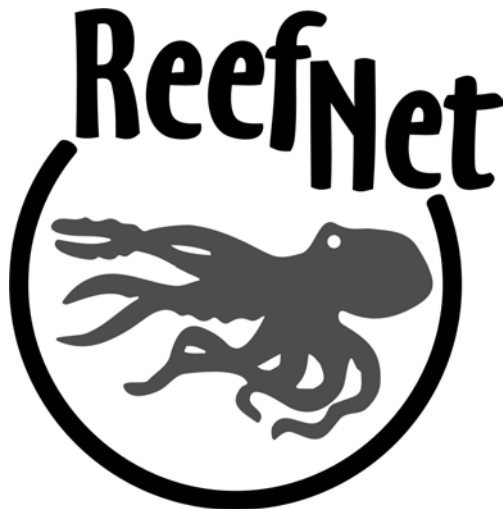
*For example: if you dive in California and download your data in New York, you will need to specify “-3” hours Time Zone correction.*

As you alter the Time Zone value you will see the dive timestamp change accordingly.

The Altitude and Water Type fields are descriptive only --- they do not affect the depth readings. These corrections may be implemented in a future version of the software.

## 5.0 Contacting Us

If you have any questions or comments about your SENSUS or SENSUS PRO device, or this software, please contact ReefNet:



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