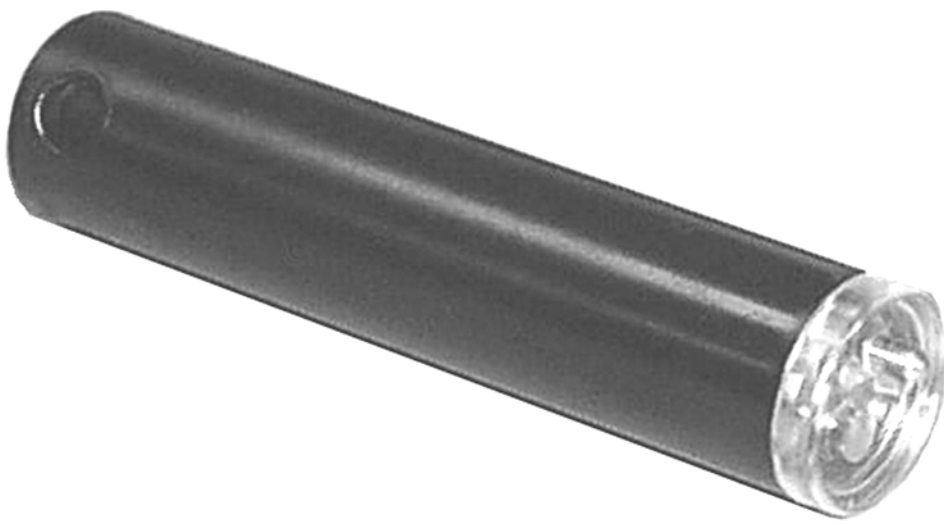


# ***MINILOG MANUAL***

***V3.09***



*July3, 2008*

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# **MINILOG DATA LOGGERS**

## **INTRODUCTION**

The VEMCO Minilog-T is a miniature data logger that records temperature at a user programmed time interval. The Minilog-TD is a miniature data logger that records both temperature and depth. The data recorded in the Minilog can be uploaded and plotted using the Minilog-Windows-PC interface, an IBM/PC/AT computer, and the Minilog software.

### **Features**

- Housed in a waterproof cylinder.
- Offloads data to an IBM/PC/AT computer with wireless infrared light interface.
- No end caps to open, or connectors needed, to read data.
- Time delayed activation.
- Up to five years of battery life.
- Up to 20 years of data retention.
- Temperature sensor mounted in a protruding stainless probe.
- Three temperature scales available
- Six full scale depth sensor options available.

NOTE: For detailed instructions on any points in the Minilog manual see the Help file in the Minilog software (topic names are included in brackets). For details on using the Help file, see the Help section of this manual.

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## **COMPUTER SETUP**

### **System Requirements**

Minilog is a Windows©95/NT/98SE/2000/XP/Vista based software application that can be executed on any IBM compatible personal or mobile computer with the following configuration:

Minimum Pentium Processor, 100MHz  
Minimum 512 kilobytes Video RAM  
Minimum VGA Monitor 16 Colour (600 x 800 pixel)  
CD drive for program installation  
One serial port for Minilog-Windows-PC interface (required)

### **Software Installation**

Minilog is a Windows©95/NT/98SE/2000/XP/Vista application. VEMCO assumes customer familiarity with Windows 95© terminology. Follow the steps listed below to install the MinilogPC software.

- Step 1: Insert the Install compact disc into the computer's CD drive.
- Step 2: From the Start menu in Windows©95/Windows NT©, select Run.
- Step 3: Type D:\MinilogSetup.exe (Assuming D is the name of the CD drive).
- Step 4: Follow the on-screen instructions.

## Connect Minilog-Windows-PC Interface to Computer

Connect the DB-9 connector, found on the cable from the Minilog-Windows-PC Interface, to a serial port on the IBM/PC/AT computer to be used. If more than one serial port is available, note the number of the serial port (also known as a com port) being used. This information will be required by the Minilog software.

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## HARDWARE

### Minilog

The Minilog is a microprocessor controlled data logger that stores data to internal Electrically Erasable Programmable Read Only Memory (EEPROM). The Minilog uses a lithium cell battery, which can power the logger for up to 5 years or approximately 1000 deployments. The temperature and depth readings are taken with an 8 bit Analog to Digital (A/D) converter.

The Sample Period within a study can range from 1 second to 6 hours. This value is set when a new study is initialized (see New Study) and determines the length of the study, which may be between 2¼ hours and 5 years. Data is stored in the internal EEPROM, which has a data retention of 20 years. Data is read from the Minilog by a personal computer interface (Minilog-Windows-PC) using infrared light.

Minilogs are available in two general types. The TR Minilog records temperature only, while the TDR version records both temperature and depth.

### Minilog12

The Minilog12 is similar to the Minilog, but uses a 12 bit A/D converter instead of an 8 bit converter. It has a standard memory of 16 kbytes.

### Minilog-Windows-PC

Minilog-Windows-PC includes an interface unit, three feet of cable, and Windows©95 software that runs on IBM/PC/AT or compatible computer. The software is provided on a 3½ inch diskette. The internal 9 volt battery is user replaceable. The Minilog-Windows-PC has three indicator LED lights, two show the progress of data communication with the Minilog and the third indicates when the 9 volt battery voltage is low.

The Minilog-Windows-PC is activated only when communicating with the Minilog program. For this reason, the battery low LED will appear to flash on and off when the battery is low.

**NOTE:** The Minilog-Windows-PC (for use with the Windows software) contains different internal hardware than the Minilog-PC (for use with the DOS software). The DOS software will function with either reader, but the Windows software will only function with the Minilog-Windows-PC.

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# USING MINILOGS

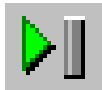
## Setting Up For the First Time

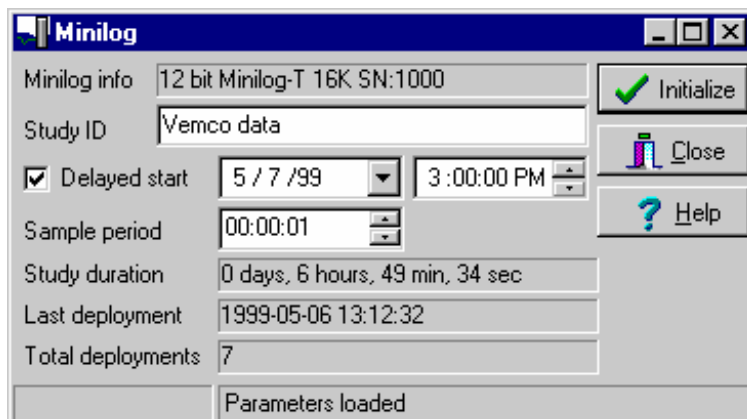
The following list need only be used when first setting up a computer for use with the Minilog software. The Minilog software will save any changes when the program is closed.

1. Install the Minilog software in the desired directory (see *Software Installation* section of this manual).
2. Open the Minilog software. Set the data directory (see *Data directory*), com port number (see *Com port*), and units (see *Units*).
3. Ensure that the Minilog-Windows-PC has been properly connected to the computer's com port (see *Connect Minilog-Windows-PC Interface to Computer* section of this manual).
4. Insert a Minilog into the Minilog-Windows-PC receptacle.
5. Load the test data from the Minilog (see *Load data*). Each Minilog is shipped with test data stored in its memory.
6. View the data, if desired. Data can be viewed as either a graph (see *Graph*) or an ASCII file (see *Create an ASCII file*).

## Using a Minilog

### 1. Initialize Minilog:

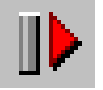
- a. Run Minilog Windows software.
- b. Place the Minilog in the cup in the top of the Minilog Windows PC computer interface so the serial number on the back of the Minilog is facing up.
- c. Rotate the Minilog in the interface until the silver temperature sensor drops into the guide hole in the interface. The serial number on the Minilog should be in the same orientation as the text on the top of the interface.
- d. Click the *Initialize Minilog* button with the green arrow, shown here on the right. The software will communicate with the Minilog and display the Minilog information in the Minilog window (see below). 
- e. Enter the study identification, delayed start date (optional), and the sample period.
  - i. **Study ID** - Enter any identification that will help keep track of the data.
  - ii. **Delayed start** - If the delayed start box is not checked, the Minilog will begin recording data as soon as the initialization is completed. If the box is checked, the Minilog will not begin recording data until the date and time specified (see *Minilog Help* for additional information).
  - iii. **Sample period** - Select the length of time between data readings. The *Study duration* line directly below the *Sample period* will reflect the time required to fill the memory given the chosen sample period.
- f. Click the *Initialize* button in the top right corner (with a green checkmark).
- g. Wait while the Minilog is initialized. A prompt will appear informing you that the Minilog is initialized.
- h. Remove the Minilog from the computer interface. NOTE: Do not communicate with the Minilog again until the data is collected. Any communication will take the Minilog out of recording mode (stop the study).



## 2. Collect Data:

- a. Deploy the Minilog as desired. The temperature sensor is in the silver point protruding from one end of the Minilog. The pressure sensor (if applicable) is the silver disc next to the temperature sensor. **WARNING:** Do not deploy the Minilog to a depth greater than the pressure sensor's rated depth or the sensor will be damaged.
- b. Retrieve the Minilog when data collection is complete.
- c. Dry the Minilog completely to prevent any water from coming in contact with the electronics in the computer interface.

## 3. Load data from Minilog:

- a. Run Minilog Windows software.
- b. Place the Minilog in the Minilog Windows PC computer interface as described in Steps 1.b and 1.c.
- c. Click the *Load data from Minilog* button with the red arrow, shown here on the right. The software will communicate with the Minilog and begin to download the data from the Minilog's memory. 
- d. Wait while the data is downloaded from the Minilog. A bar in the bottom left corner of the *Downloading data* window shows the progress of the download.
- e. Select the YES button when prompted if you want to view the graph of the data.
- f. Remove the Minilog from the computer interface.

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## USING THE HELP FILE

Help can be accessed by clicking on an available Help button within a window, by selecting *Help topics* in the *Help* menu, or by pressing the F1 key.

### Help Topics

#### Contents

To select a general topic for overall help, use the *Contents* feature. Open a topic by double clicking on the book symbol next to the name, or on the name itself. A list of sub-topics will appear to choose from. Double clicking on one of these sub-topics will open the help topics related to that general topic.

#### Index

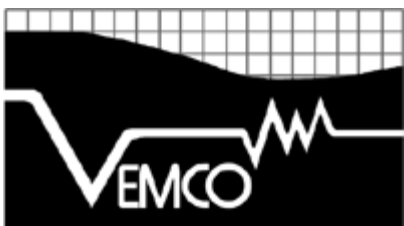
To select a specific topic, use the *Index* feature, which will display the complete list of topics in the help file. To select a topic, either move through the list (using the arrow keys or the scroll bar) until the desired topic is highlighted, or type the name in the box at the top of the window. Once the topic is highlighted, either select *Display* at the bottom of the window, or double click on the topic name.

#### Find

To search for a specific word within a topic use the *Find* feature. Follow the on-screen instructions. A list of topics containing the desired word is listed in the third box from the top. Select a topic and click the *Display* button at the bottom of the window.

### Printing from a Help file

To print a topic within the Help file, open the desired topic and select *Print* at the top of the window.



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