

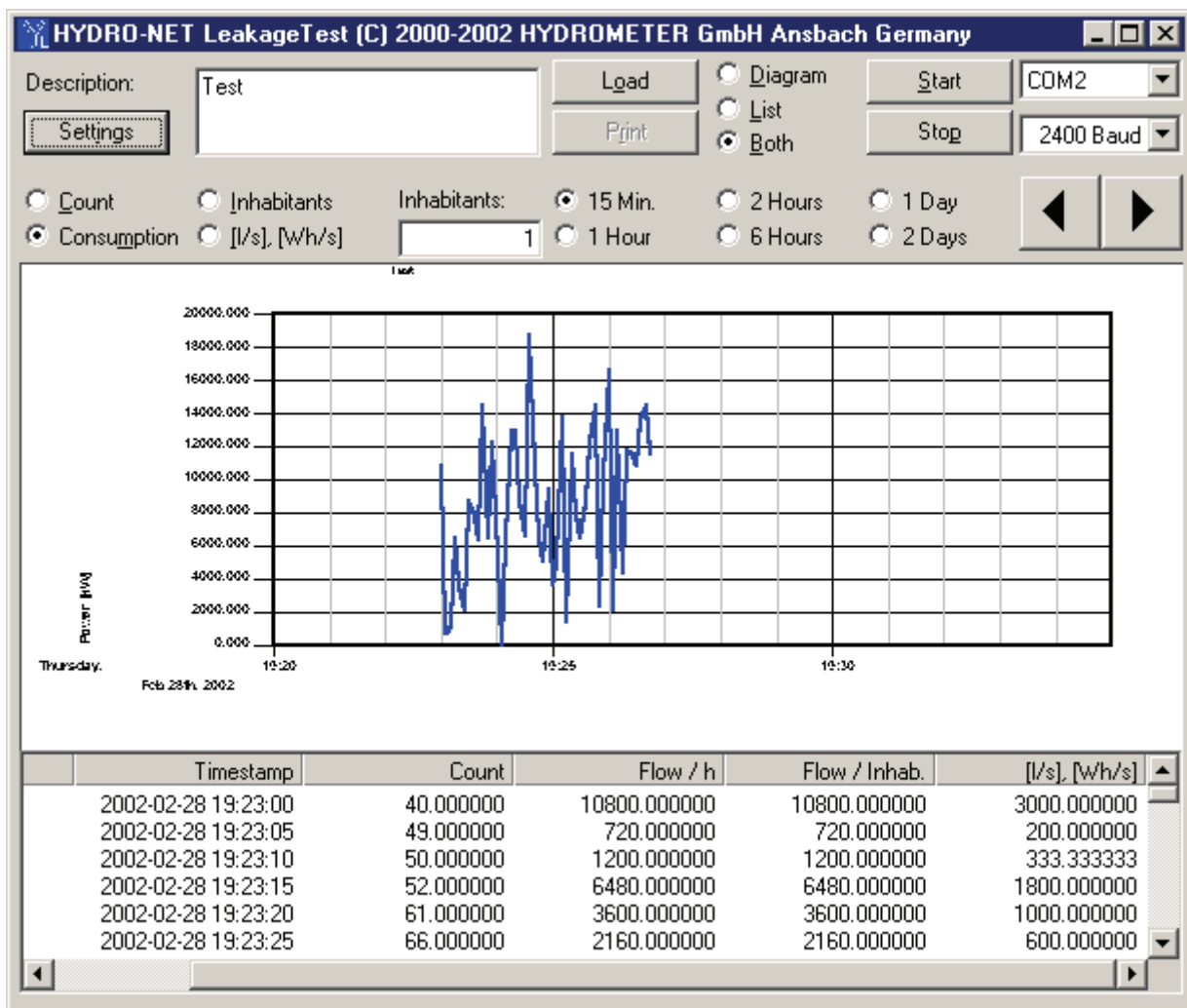
# HYDROMETER

## HYDRO-NET

### Leckagetest

## User Manual (English)

### Version: 1.8



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[www.hydrometer.de](http://www.hydrometer.de)  
[www.hydrometer.com/systems](http://www.hydrometer.com/systems)

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## 1 Introduction

HYDRO-NET Leakagetest was developed to monitor and register consumptions of different kinds with high timely resolution (e.g. water consumption, electrical power, heat power and more).

The software was especially made to detect leakages in water pipes.

HYDRO-NET Leakagetest reads out a meter with M-Bus interface every 5 seconds and stores the current meter count and the current or calculated flow into a file. During the readout the meter counts are visualised as XY-plot and / or list.

The stored values can be loaded later on and displayed again.

## 2 System Requirements

HYDRO-NET Leakagetest will run on a Pentium class PC computer with at least 32 MByte of main memory, Windows 95 / 98 / NT 4.0 SP4 / 2000 / ME and approx. 4 MByte of free hard disk space. Additionally, a free serial port is necessary for the connection of an M-Bus level converter / M-Bus repeater. For printing protocols or XY-plots a Windows compatible printer should be available.

## 3 Installation

The complete HYDRO-NET Leakagetest installation is packed into one file named **HYDRONETLTest\_Installation.exe**. You can find this file on the installation CD or, if you have downloaded HYDRO-NET Leakagetest from the internet, in the folder you have specified for downloading.

Please start **HYDRONETLTest\_Installation.exe**. Follow the on-screen instructions.

If you are trying to install HYDRO-NET Leakagetest on a computer with Windows 95a, you might encounter difficulties. In the case of an installation abort please get the free Windows update **DCOM95.EXE** (e.g. from the Microsoft web page or from the HYDRO-METER System Software CD) and install it on your computer. Please reinstall HYDRO-NET Leakagetest afterwards.

After installation you will find this documentation in PDF format in the folder **English** below the application folder, usually:

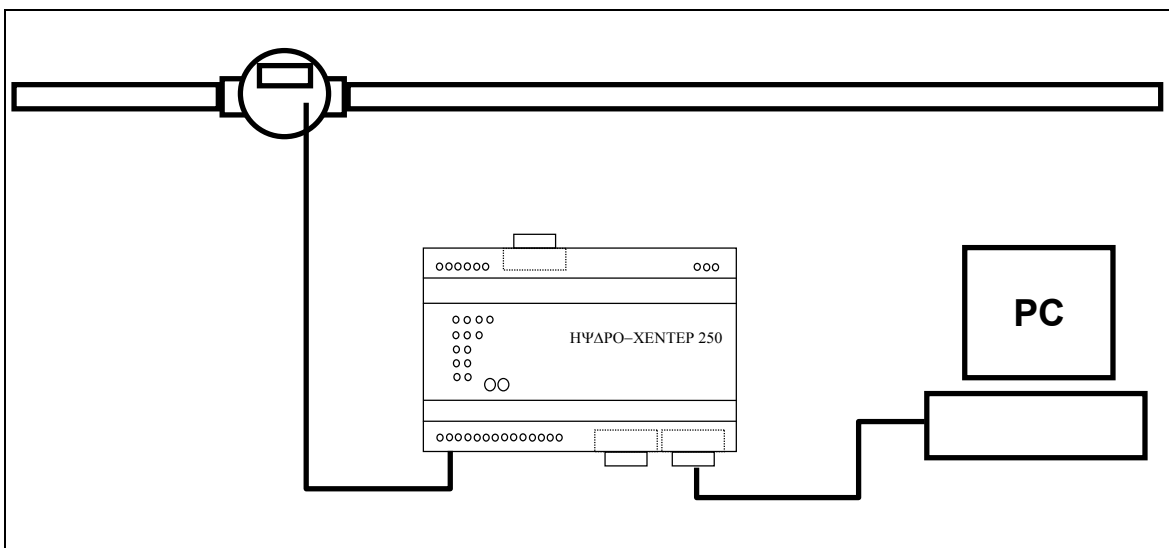
**c:\program files\hydrometer\HYDRO-NET LTest\english\  
HYDRONETLTest\_Manual\_Eng.pdf**

## 4 Required Equipment

For using HYDRO-NET Leakagetest you will need the following devices, besides a PC computer with the software installed:

- M-Bus level converter / repeater, e.g. HYDRO-CENTER 25, 60 or 250
- M-Bus meter, e.g. HYDROMETER FLYPPER I, FLYPPER II, SCYLAR II, SHARKY-HEAT, HYDRO-PORT or similar water or heat meters.

The setup is shown in the picture below:



The M-Bus cable of the meter is connected to the M-Bus output of the HYDRO-CENTER.

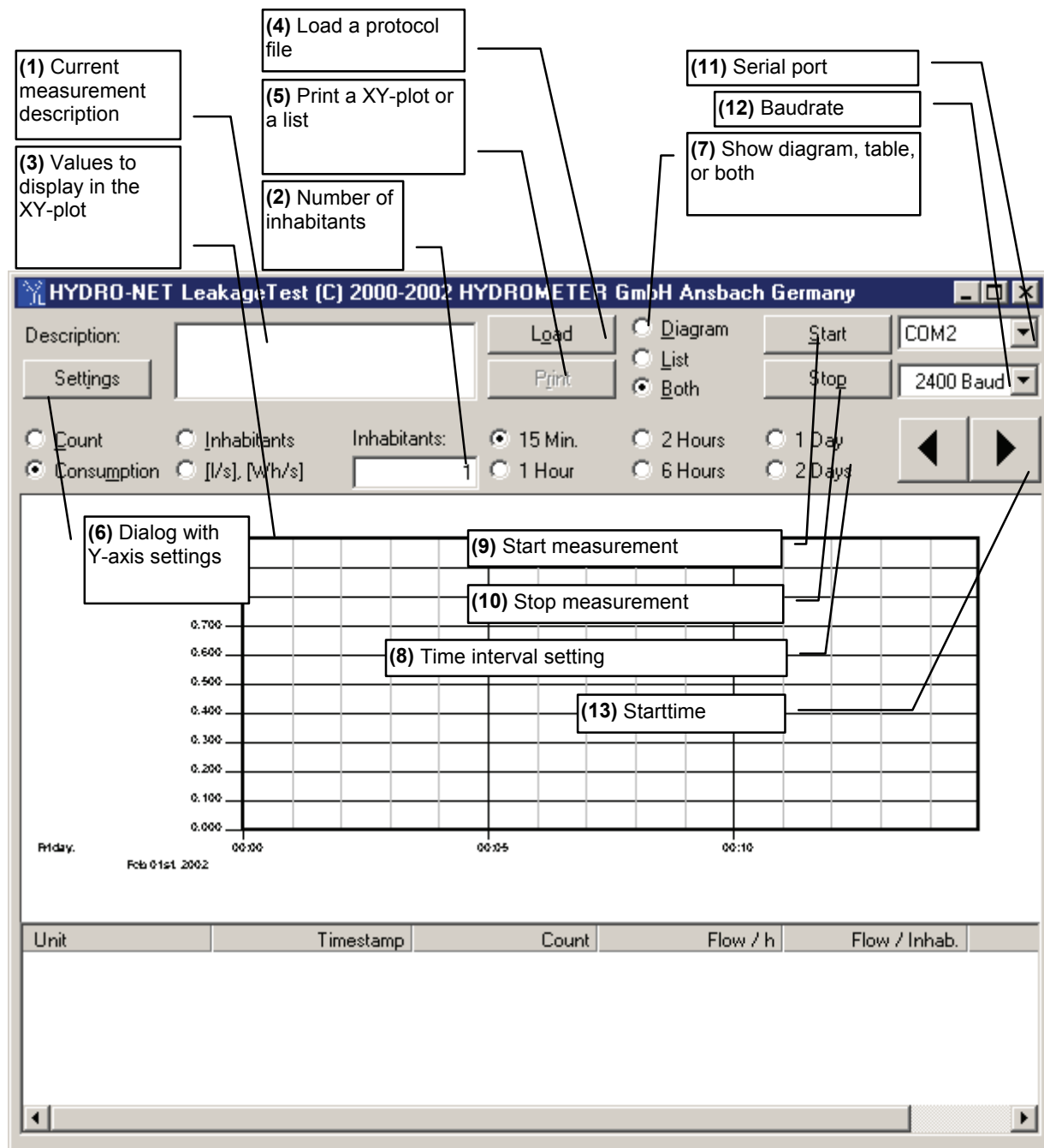
The serial interface cable is connected to the PC-input of the HYDRO-CENTER and to a free serial port of the PC (e.g. COM2).

A 12..36 V AC / DC (approx. 300 mA) power supply is necessary for supplying the HYDRO-CENTER 60 and 250. The HYDRO-CENTER 25 is powered from the mains power supply.

There may be more than one M-Bus meter connected to the M-Bus level converter, however, this software may read only one meter at a time. If there is more than one meter connected to the M-Bus level converter you have to specify the address of the respective meter.

## 5 Start of HYDRO-NET Leakagetest

After installing HYDRO-NET Leakagetest you may click on **START->PROGRAMS->HYDRO-NET LTest** to start the software (or on the icon on your desktop). The screen below will appear:



1. **Current measurement description.** This is the filename of the protocol file which is saved to disk.
2. **Number of inhabitants.** If you want to calculate the consumption / flow per inhabitant you may enter the number of inhabitants in here. If not enter "1".

### 3. Values to display in the XY-plot.

- Count: The meter counts directly
- Consumption: Consumption / power in m3/h or kW
- Inhabitants: Consumption / power per inhabitant (see 2.)
- [l/s], [Wh/s]: Consumption / power in l/s or Wh/s

4. **Load a protocol file.** Each measurement is stored as protocol file to the hard disk and may be recalled using the description (see 1.). The filename of the protocol file is made up from the description and the timestamp the measurement is started (e.g. "Test-2000-04-01-12-03-23", protocol of "Test" from April 1<sup>st</sup>, 2000 12:03:23). To load a protocol file the current measurement must be stopped otherwise this option is disabled.

5. **Printout.** If only the XY-plot or the list is displayed the current display can be printed. If both are shown this option is disabled. Please select "Diagram" or "List", explicitly.

The screenshot shows the HYDROMETER software interface with several callout boxes providing detailed information about the settings:

- M-Bus primary or secondary address of the meter:** - leave blank for using the broadcast address (only one meter) - or enter a primary address (max. 3 digits) - or enter a secondary address (8 digits) (check Flypper I only if you are using a HYDROMETER Flypper I)
- Y-axis label:** [Text input field]
- Size of the font of the XY-plot:** [Dropdown menu showing 'Large']
- Enter pathname of the directory for storing data:** [Text input field with 'E:\PROGRAMS\LEACKAGETEST\DEBUG' and a 'Browse' button]
- Optional maximum / minimum line:** [Section containing 'Upper / Lower' checkboxes and input fields for 'Upper Limit' (1.000) and 'Lower Limit' (0.000)]
- Line Smoothing:** [Radio buttons for 'No Smoothing', 'Smoothing 15 Sec.', 'Smoothing 30 Sec.', and 'Smoothing 1 Min.']
- Calculating Consumption or Flow:** [Radio buttons for 'Consumption' and 'Current Flow']
- HYDROMETER Scampy / Flypper II HiRes:** [Radio button]
- Minimum / Maximum setting of the Y-axis automatically or manually:** [Section containing 'Autoscale' checkbox and input fields for 'Maximum' (4.000) and 'Minimum' (0.000)]
- No Smoothing:** Display every value.
- Smoothing 15 Sek:** The average of the meter counts of 15 seconds (3 counts) is calculated.
- Smoothing 30 Sek:** The average of the meter counts of 30 seconds (6 counts) is calculated.
- Smoothing 1 Min:** The average of the meter counts of one minute (12 counts) is calculated.
- Consumption:** Calculate and display the consumption of two consecutive meter counts.
- Current Flow:** If the M-Bus meters returns the current flow this value is displayed. If not the consumption is calculated and displayed.
- HYDROMETER Scampy / Flypper II HiRes:** If there is a HYDROMETER Scampy or Flypper II connected it is possible to read out the high resolution volume counter (1 ml or 10 ml) which is returned within the manufacturer specific part of the M-Bus telegram. This option is only working with HYDROMETER Scampy or Flypper II. Using any other meter with this option will only return zeros.

6. **Dialog with Y-axis settings.** If you select this option a dialog with several Y-axis settings appears as shown above.
7. **Display type.** Select whether to display the XY-plot, the list or both. Please notice if you display both the printing option is disabled.
8. **Time interval setting:** Set the time interval which should be displayed in the XY-plot. To set the starting point click on one of the arrow buttons (see 13.). If you have lost you current starting point click once again the time interval setting to reset the starting point.
9. **Start measurement:** Starts a new measurement.
10. **Stop measurement:** Stops the current measurement. Please notice that after you have stopped a measurement you are not able to restart it. If you press "Start" (see 9.) again a new measurement with a new protocol file is started.
11. **Serial port setting:** Please enter the serial port to which the HYDRO-CENTER is connected to.
12. **Baudrate setting:** Please enter the baudrate used for communication with the M-Bus meter. Usually, you should not alter the default setting of **2400 baud**.  
If you select "**Modem**" you are able to establish a modem connection to a remote HYDRO-CENTER with modem. In this case a modem must be connected to your PC. You will be asked for the phone number of your remote system and after establishing the connection the data collection works the same way as for a direct connection.  
If you stop the data collection (**10. Stop**) you will be asked whether to cancel the connection or not. If you do not cancel the connection you can start a new measurement immediately without re-establishing the connection.  
**NOTE:** An established connection can only be cancelled if you have started a measurement. Press "Stop" and answer the question whether hanging up or not with "YES". For hanging up you may also terminate the program.
13. **Starttime setting:** Click the arrow buttons to shift the starttime one XY-plot time interval to the left or to the right. If you have lost you current starting point click once again the time interval setting to reset the starting point.

## 6 Start a Measurement

1. Enter the correct serial port to which the HYDRO-CENTER is connected.
2. Enter the baudrate for communication with the M-Bus meter. Usually, you should not alter the default setting of 2400 baud.
3. Enter a measurement description (used for the protocol file).
4. Enter the number of inhabitants (if you do not want to calculate the consumption per inhabitant enter "1").
5. Set the display type option to "Both"
6. If you want to change the directory where to save the measurement data press "Settings" (see point 6 chapter 5).
7. Press "Start".

After a maximum of 5 seconds the first meter count should appear in the list below the XY-plot. If there is no meter count after 15 seconds please check the settings of the serial port, the baudrate, and the cable connection to an from the HYDRO-CENTER. HYDRO-NET Leakagetest should work with most water meters and heat meters, however, the software is only tested with HYDROMETER Flypper I and II.

After two displayed meter counts the output of the XY-plot starts.

A meter count is recorded every 5 seconds. This setting is fixed and cannot be altered. If you want to stop the measurement press "Stop".

You may record a maximum of 16384 meter counts in one protocol file, therefore, you are able to record a maximum of 22,75 hours at one value per 5 seconds).

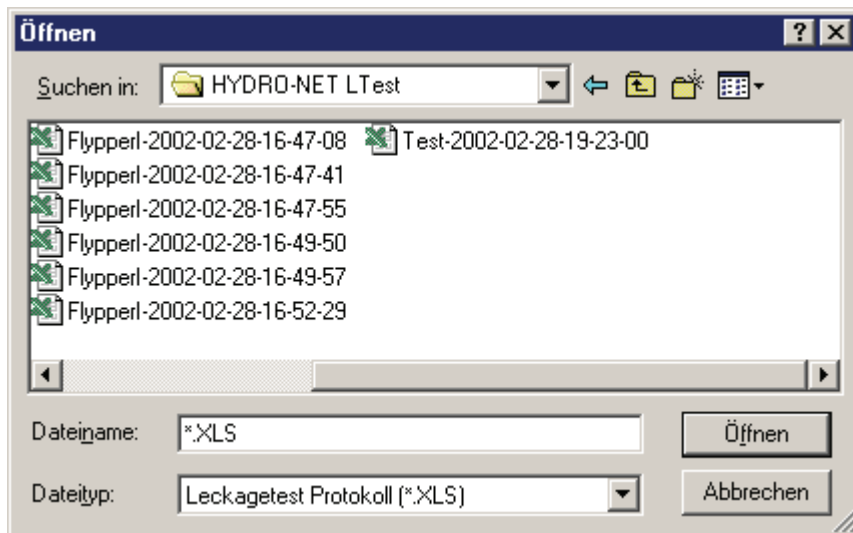
Every measurement started is automatically saved to the hard disk as a protocol file. The protocol files are written to the defined data directory, usually "C:\PROGRAMS\HYDROMETER\HYDRO-NET LTest". You may change the data directory (see point 6 chapter 5). The name of the protocol file is made up of the description and the timestamp the measurement is started:

Test-2000-04-01-12-04-23.XLS

stands for "Test" from April 1<sup>st</sup>, 2000 at 12:04:23. The protocol file format is compatible with standard spread sheet programs like Excel® (ASCII text divided by tabulators). Protocol files no longer used must be deleted manually e.g. using the Windows Explorer®. If you have accidentally deleted your program files you may reinstall the program. Your settings are not lost.

## 7 Load a Protocol File

1. Stop the currently running measurement.
2. Press "Load", the dialog below appears:



3. Select one of the protocol files and press "Open".

The meter counts from the selected protocol file are loaded and displayed. Please notice that the description and the number of inhabitants may not be altered afterwards even though you may enter a new description and a different number of inhabitants. Additionally, you are also not able to change the "Consumption" / "Current Flow" setting from the Y-axis options dialog.

The results of a loaded protocol file may be printed and visualised the same way as current measurements.