WinLog

Auswertung von MINILOG-Registrierungen

English Version

weilekes SOFTWARE

User's Manual

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Weilekes Elektronik GmbH
Wanner Str. 170
45888 Gelsenkirchen
Germany

Tel: (0)209 / 170 80-0
Fax: (0)209 / 170 80-20

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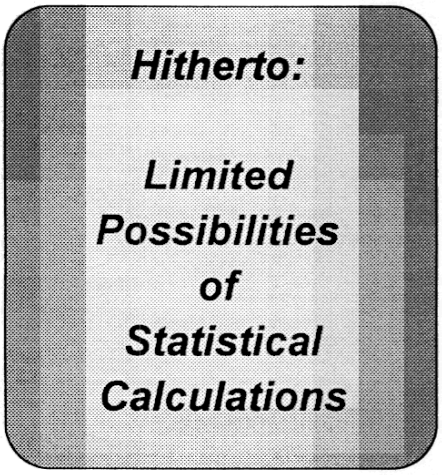
Contents

1. Introduction

Handling and evaluation of paper-based recordings requires large amount of time and leaves the user with the problem of filing the charts after evaluation.
Retrieving specific measured values involves rolling off meters of charts or searching through paper sheets filed together with hand written comments or chart's pieces attached.

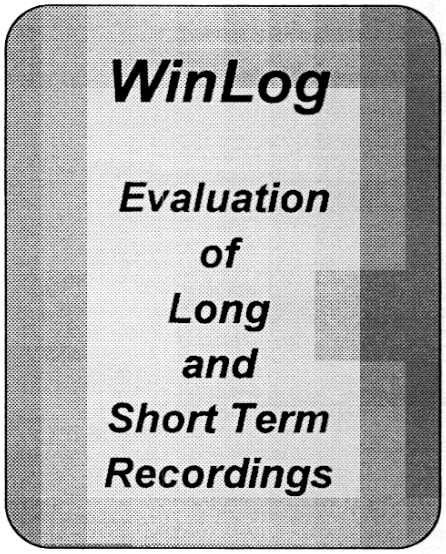


It was almost impossible to enlarge details as was the case with transferring of sampling values to PC or the automated calculation of mean values. All this required laborious value by value manual procedures. This type of evaluation often exceeded the time of actual recording.

The development of mobile sampling value acquisition enabled automated recording of single values. However, mains independent recordings or short term high resolution recordings with respectively large amounts of data were impossible to realise by those earlier units due to their relatively small storage capacities and high current consumption.

Only with further development of semiconductor storage modules as well as introduction of modern low current consumption microprocessors and analog-digital converters, it was finally possible to store large amounts of data electronically when recording long term or high resolution short term sampling with subsequent automated time saving PC processing ease of such data.

Minilog represents the successful design of miniature sampling data logging unit with large data storage capacity. Combining ease of operation with dual channel recording and auto-range feature Minilog provides data logging facilities with multiple applications of cathodic protection. The task was to enhance the excellent technical performance features of Minilog adequately by convenient evaluation and operating software.



Ideal conditions for specifically graphic display and easy-to-operate software offered the development of evaluation software ***WinLog*** for Windows. The Windows-runnable software ***WinLog*** serves the evaluation of recordings with Microsoft Windows operating system. Mouse operation and menu prompting as standard with shop-available Windows software are the prerequisites of an easily acceptable and efficiently useable software.

WinLog

Ease-of-Operation with Mouse Assistance

Additionally graphic operating system Window offers ideal conditions for graphic evaluation as well as fast and simple production of sampling values via printer and plotter. ***WinLog*** offers preview facility as well as convenient and easy to operate functions and multiple high performance options.

Last but not least the large variety of printer drivers provided by Windows for the various output devices like laser printers, plotters, mono and multichrome operated ink jet printers, opens the full range of evaluation facilities offered by ***WinLog***.

WinLog

Supported Matrix Printers, Ink jet Printers, Laser printers,

WinLog

Forming Mean Values, Comparing, Voltage Magnifier, Zoom Feature, Comment Marking, Addition of Constants, Calculating Factors, etc, etc, etc...

WinLog provides you with those features often missed when processing chart recordings. You may mark essential periods of recording, zoom voltage ranges, erase unwanted periods of recording, form mean values of switch-off potentials, transform shunt voltages into currents by relevant factors, compare recordings of different Minilog units and much more. You may export Minilog recordings in ASCII standard for other software evaluation (e.g. data banks)

System Requirements

WinLog software requires:

- IBM-AT, PS2 or compatible
  286/386 SX/386/486 SX/486 computer

- 4 MB RAM storage minimum

- Hard Disk with 2 MB min. vacant storage

- Colour graphic card VGA with 640x480 pixels min.

- Serial port for Minilog connection

- Parallel port for ***WinLog*** copy protection plug

- mouse (serial or Bus mouse)

- Windows 3.1

- DOS 3.xx or higher

WinLog performs optimally with "Extended Mode for 386 type PC". Selecting Windows menu "Help" of Program Manager and command "Info..." will indicate mode installed. Not installed "Extended Mode" might lead to system crash and/or incorrect textmarkings of ***WinLog***.

2. Installation

Installing ***WinLog*** is easy. The software diskette holds installation program which installs ***WinLog*** automatically. Start Windows and insert software diskette ***WinLog*** in disk drive "A". Select menu bar "Execute" of Program Manager of menu "File".

Enter following text in appearing dialogbox:

a:\install

Calling-up "Installation Program"

Confirm entry by <RETURN> or click "OK".

This will start installation program.

The installation program will ask for the base directory, where ***WinLog*** is to be installed.

Create WinLog Directory

The installation program will suggest the directory "**C:\LOGGER**" for the installation of ***WinLog***.

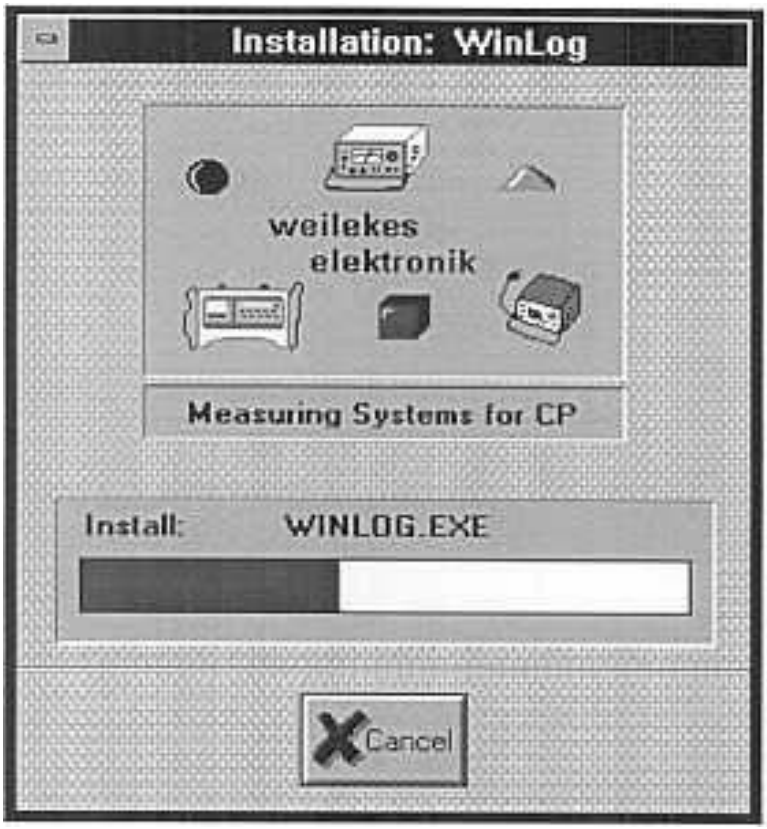
You may either confirm by <RETURN> or click "OK". To modify directory name or install ***WinLog*** in another drive but "C" you will have to alter directory name suggested by using key board entry.

Upon confirmation of directory ***WinLog*** will be installed on harddisk by installation program.

The installation program will export programs ***WinLog***, LogPlot and Logtext from diskette, establishes sub directory "Logdata" for your recordings and copies "demo_1" and "demo_2" - demonstration files into sub directory.

Additionally a file "ReadMe" will be copied containing up-dated instructions of ***WinLog***.

During installation procedure a red bar appears displaying installation progress by advancing length.



Installation in progress

Upon completion of installation the installation program hands back control to Program Manager.

The installation program automatically arranges for a program group with name "Minilog" and registers ***WinLog*** as user with relevant symbol (Windows slang "Icon"), to be followed by relevant icons of LogPlot, LogText and "ReadMe".

Group "Minilog"

Double clicking appropriate icons will automatically start program selected.

To start ***WinLog*** you will simply have to double click relevant ***WinLog*** icon. "ReadMe" double clicking serves to display the latest up-date of ***WinLog*** not yet contained in this description.

For more detailed information on LogPlot or LogText kindly refer to Appendix A.

The Copy Protection Plug

Unauthorised use of ***WinLog*** is being prevented by copy protection plug supplied together with the software. The authorised user may copy the original diskette for his own purposes for as often as required. This, however, requires installation of copy protection plug at printer port of computer. Any attempt of using program without this plug will be accompanied by simultaneous warning.

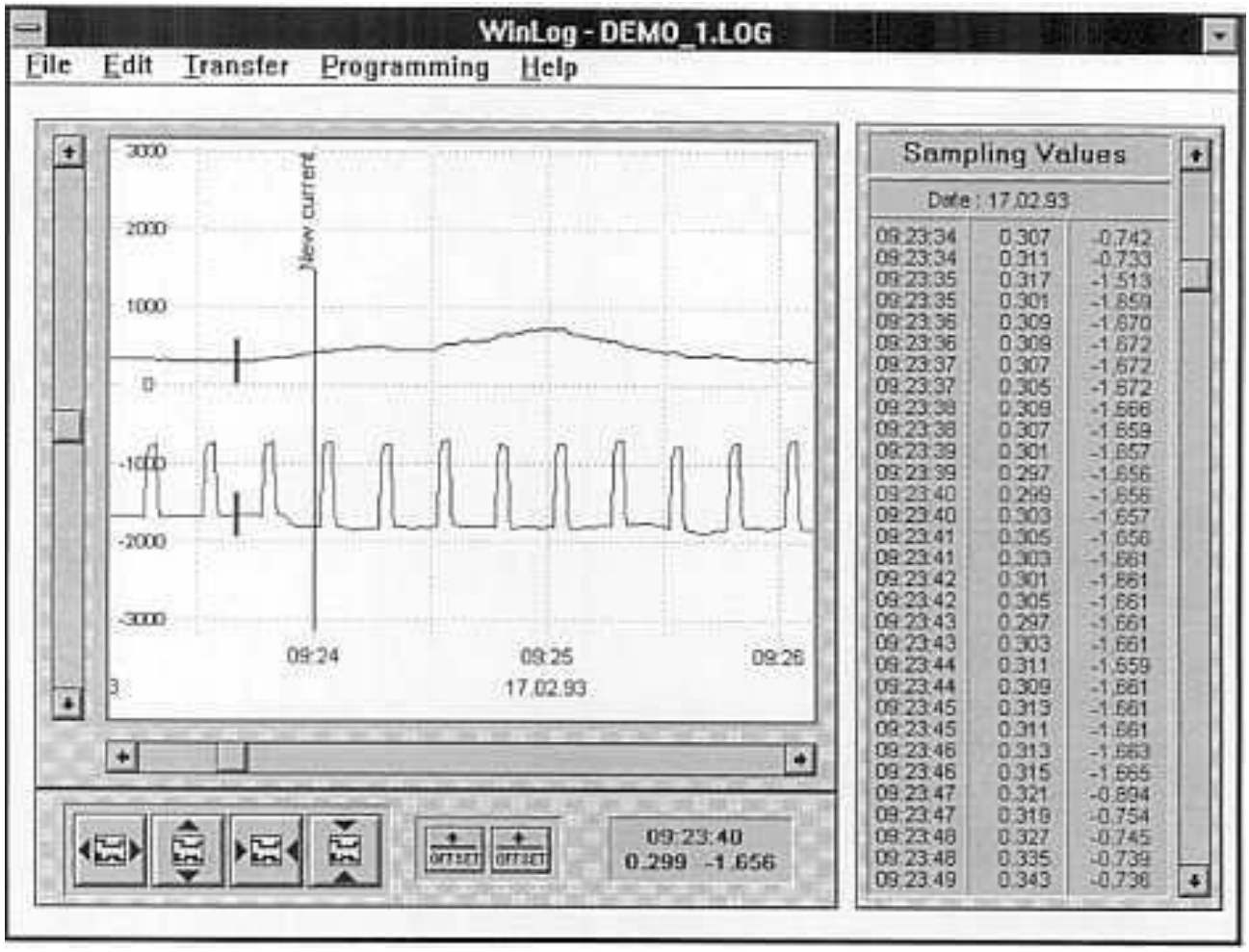
Individual coding links the copy protection plug with the relevant software program. For protection of copy rights purposes a replacement plug in case of loss will only be supplied together with purchasing a new program. For security reasons therefore it is advisable to screw this plug onto parallel port of your computer. It may remain there even during use of other software programs without interfering with their operations.

Note:

Should you own already other software packages of Weilekes Elektronik GmbH no additional plug will be supplied when purchasing ***WinLog***. In this case ***WinLog*** will have to be installed in that PC already equipped with the copy protection plug.
Should you wish to install ***WinLog*** in a different PC kindly contact Weilekes Elektronik GmbH by telephone or Fax to order an additional plug for ***WinLog*** installation.

3. *WinLog* Operating Elements

After starting-up ***WinLog*** it's operating surface system appears on screen:



WinLog Screen during Evaluation

Prior to demonstrating complete run of a recording and it's evaluation, following hereafter the entire menu commands and functions of all operating elements and description in details.

The ***WinLog*** operating system consists of the following display and operating elements:

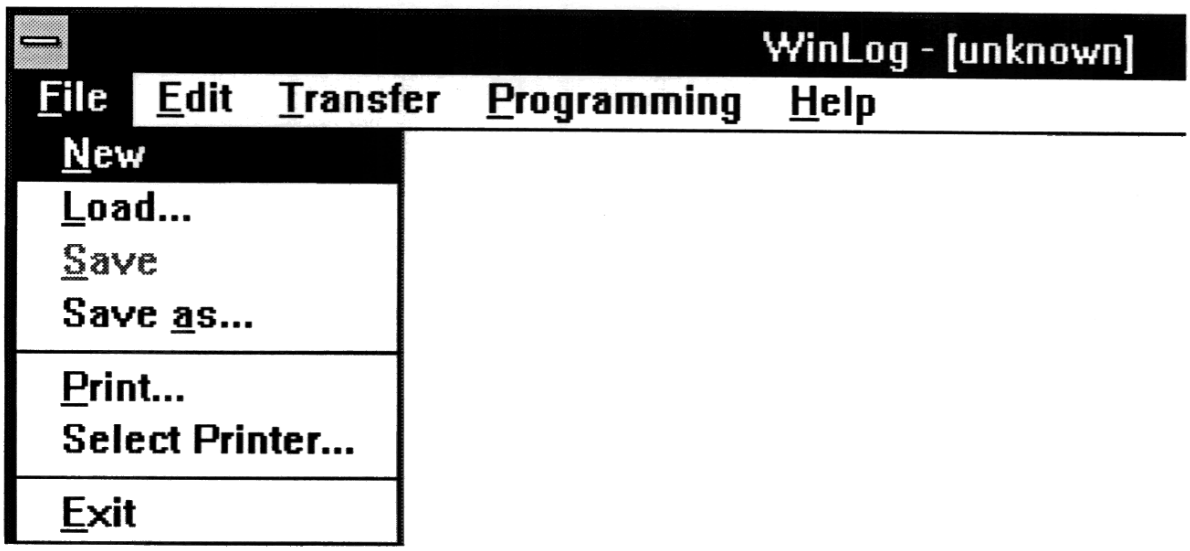
1. Menu bar with various menu commands

2. Recorder window with operating elements
   of supervision of graphic display
   (Y-axis scrollbar, X-axis scrollbar, Zoom and Offset buttons)

3. Sampling Values' Table with numerical display of sampling values

4. Menu: File

The menu "File" serves to load and save sampling data recorded and printing of recordings by printer or plotter



Menu: "File"

Command: New

Should you wish to erase entire recordings you may do by clicking "New".

This will erase all measured values stored, offset and legend markings.

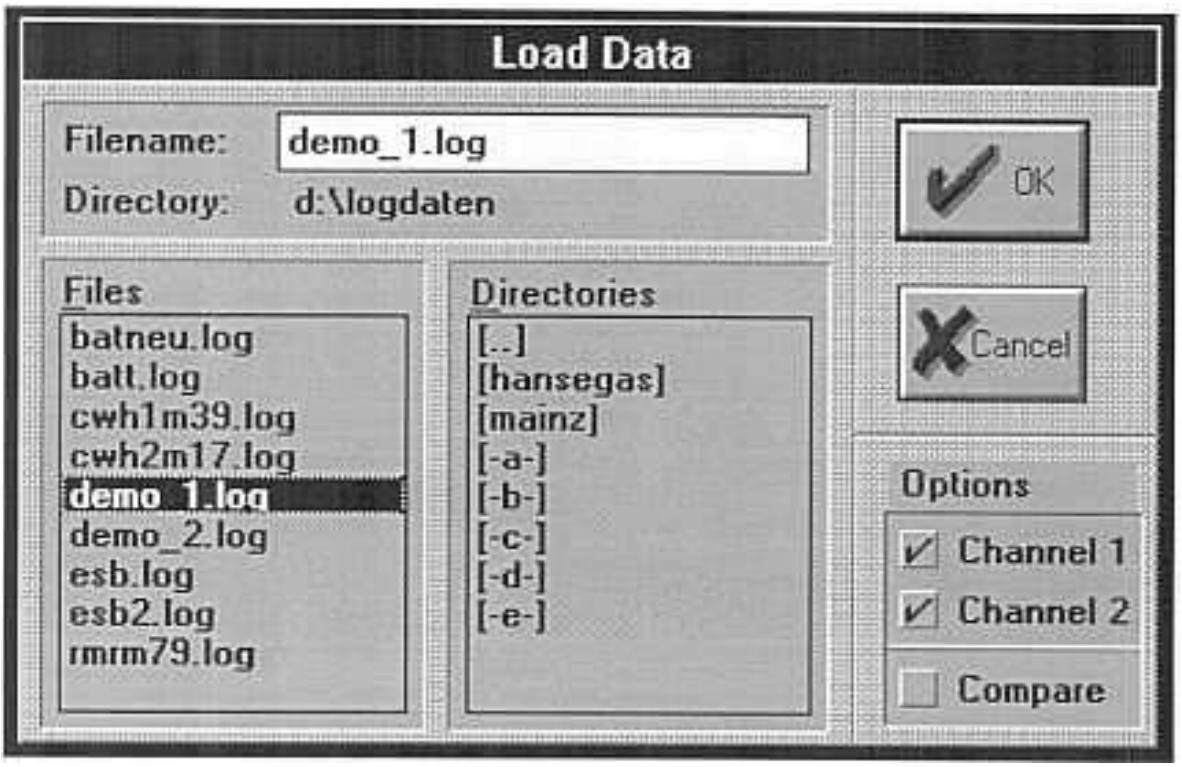
Command: Load

This command loads the existing files of ***WinLog***, with simultaneous display on Recorder screen and table of measured values. Printing of the recording of sampling values by printer or plotter may be effected subsequently.

By command "Load" you may also load a single channel of one file only. This requires marking of channel desired in field "options".

For comparison of recordings purposes of different Minilogs any additional channel may be added to currently displayed recording, while Minilog automatically considering time and date stamping of both channels and correctly superimposing both chart lines.

Having clicked command "Load" a dialog box shows as following:



Dialog: "Load Data"

You may also load a file by entering file name to be followed by clicking "OK". You may also select another file name appearing in left hand dialog box by double clicking. To change directory or disk drive double click relevant directory name and disk drive appearing in right hand box.

Options Box

Marking the "Channel 1" and "Channel 2" checkboxes serves to select one or both channels to be loaded. Should the selected file contain one channel only, ***WinLog*** will be able to load this one channel only.

The checkbox "Compare" allows you to pre-determine the inclusion of those time and date stamping pieces of informations of such a channel already stored when loading that channel. This allows synchronous comparison of newly recorded sampling values with those already stored.

This option is sensible only if one channel is being prepared for loading since ***WinLog*** can only process data of two channels altogether simultaneously, displaying them accordingly.

Loading both Channels

Having selected both checkboxes both channels will be loaded in memory.

Loading one Channel only

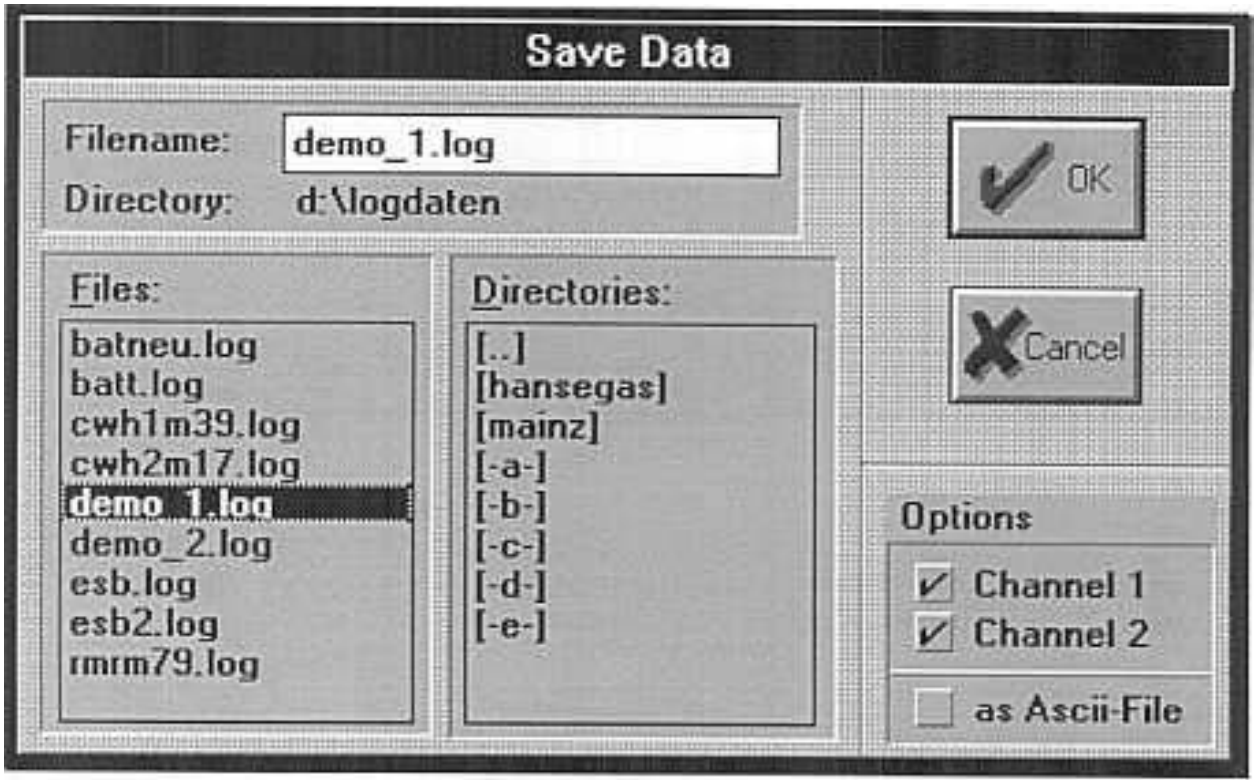
Having selected one channel, this channel only will be loaded from file. Should the file contain one channel only while you have selected channel 2, the data of 2. channel will be loaded in 2. channel of memory, and that one of channel 1 in memory will be erased.

Comparing two Recordings

Selecting just one channel checkbox together with checkbox "Compare" this channel will be loaded for comparing purposes with that file already in storage. ***WinLog*** automatically considers the time markings of the recording in storage as well as the time markings of the file to be loaded. This enabling comparison of synchronous recordings form different Minilog units.

Command: Save

This command enables saving in a file of those sampling values for later processing. Following dialog box is displayed:



Dialog: "Save Data"

To save file enter file name and click "OK".

Double clicking file name appearing in left hand list box overwrites existing file.

Double clicking relevant directory or disk drive resp. appearing in right hand list box initiates change of those.

Options: "Save Data"

Selecting appropriate checkboxes selects saving one or both channels.

Selecting checkbox "as Ascii-File" saves sampling values in Ascii format. The recording can be evaluate with other software programs (e.g. Dbase or Excel), too.

For future comparing purposes:

For future optimal comparing purposes of dual channel recordings with other recordings it is sensible to store both channels individually.

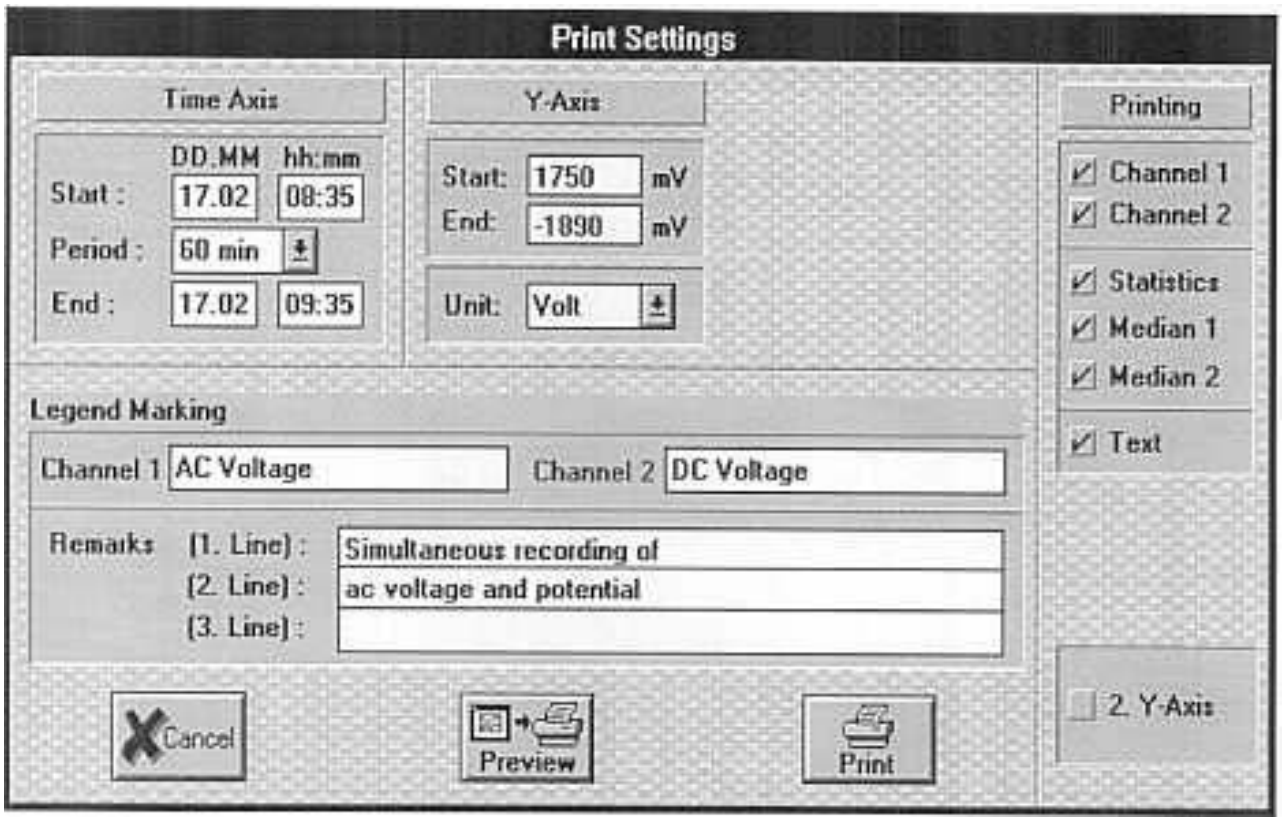
Click "Channel 1" checkbox and save data. Select "Save" again and click just "Channel 2" checkbox and save data accordingly.

By doing so both channels have been saved individually and are available for selective comparison purposes.

Command: Print

A most versatile menu command is "Print". It serves to display the measured values graphically either by printer or plotter resp.

You may choose the scale of voltage and time axis freely, design legend marking individually for each print out and let ***WinLog*** conduct statistics calculations (max., min., mean values, standard deviation) automatically.
After clicking command "Print" ***WinLog*** will open dialog box to enter all data to be printed:

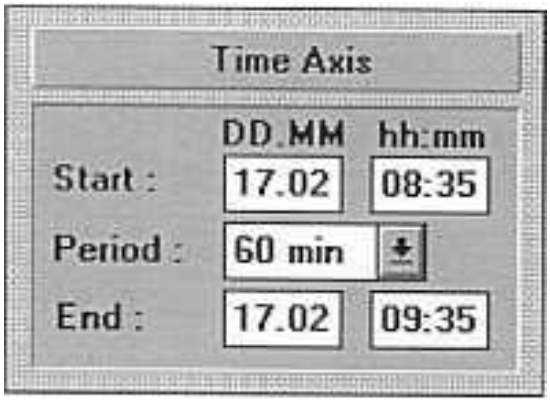


Dialog "Print Settings"

You may now enter all data to be printed in accordance with layout required.

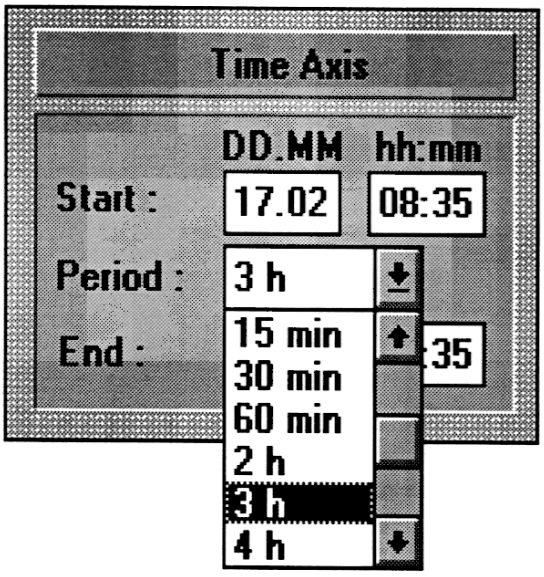
Edit Field: Time Axis

The edit field "Time Axis" serves to pre-set time and date of printing start-up and termination. The graphic output of sampling values will start at pre-set time only and will end accordingly. Click relevant edit field to adjust appropriate time and date information.

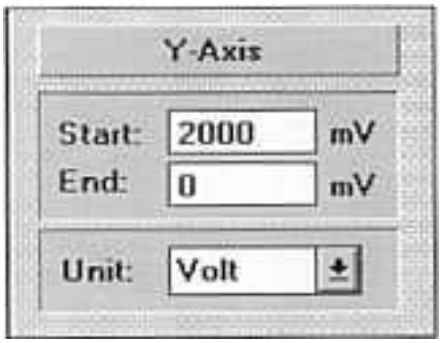


Edit Field: "Time Axis"

A combo box displaying those options of recording periods that are available by ***WinLog***, allows selection of several recording periods by "mouse-click"-activation. ***WinLog*** intelligently considers sampling rates set and offers logical recording periods (e.g. with sampling rate of 0.1s, no periods longer than 2h would be suggested, since Minilog is not able to record for longer than this at that sampling rate)



Unfolded Combobox: "Period"



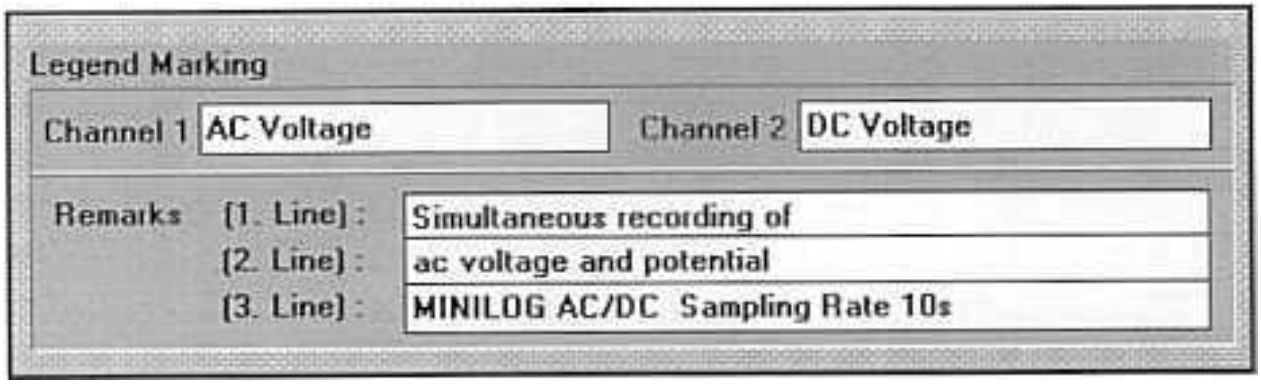
Edit Field: "Voltage Axis"

Edit Field: Voltage Axis

The edit field "Voltage Axis" selects voltage range to be printed. Max. value of Y-axis represents the upper voltage limit, while min. value representing the lower one within which limits sampling values can be printed.

Edit Field: Legend Marking

This field serves the entry of channel identification and additional 3 line comments.



Edit Field: "Legend Marking"

Checkboxes: Printing

This checkboxes allows the selection of ***WinLog*** program printouts by simply clicking relevant checkbox. ***WinLog*** standard suggests output channels 1 and 2, display statistics with automatic inclusion of mean value and printout of possibly existing comments of sampling values.

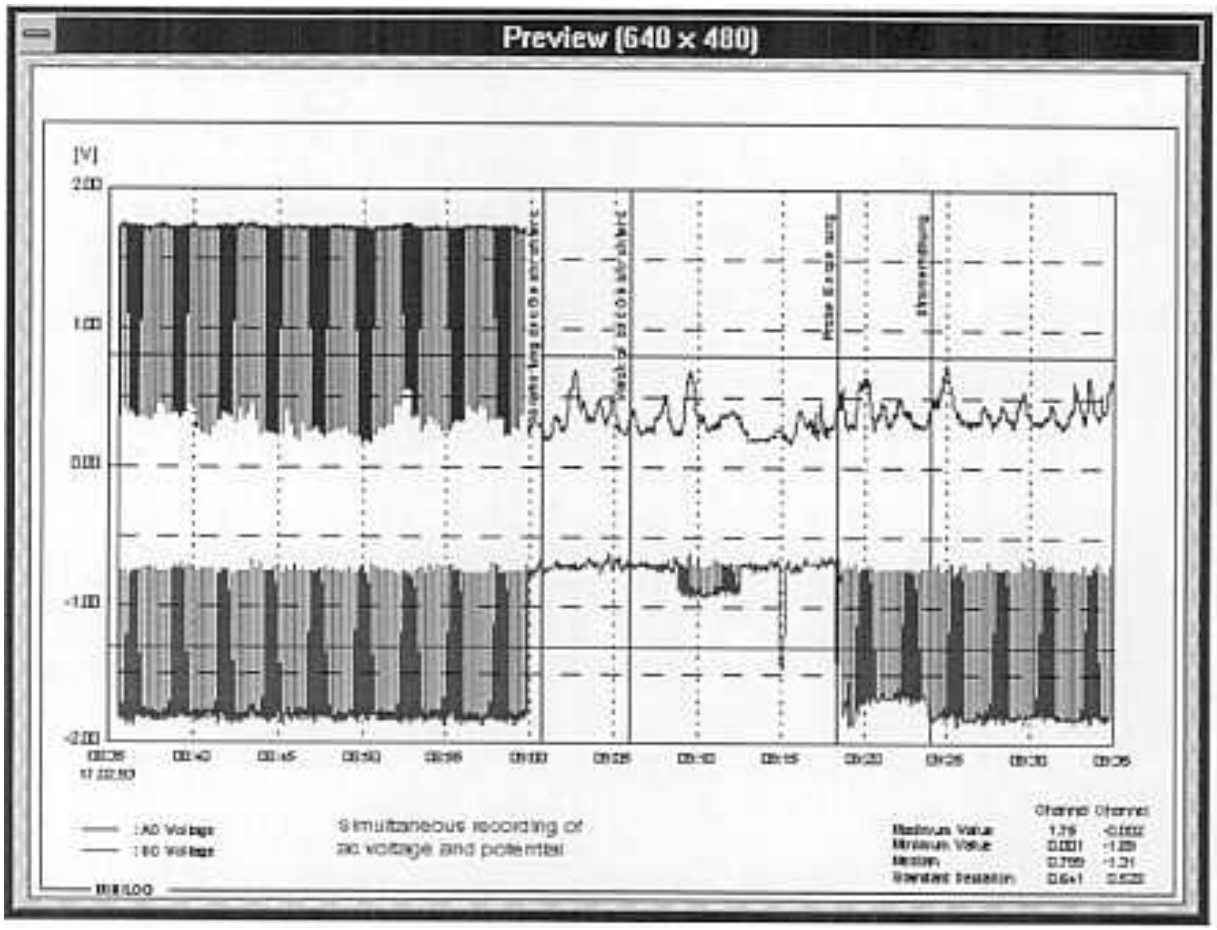
Checkboxes: "Printing"

Preview Button

Clicking "Preview" button allows simplified check of print-out prior to actual printing.
WinLog follows the principle "WYSIWYG"- What you see is what you get.

Preview Button

To close the "preview" window simply double click the left hand top of box corner and all edit fields are available again for further editing of printouts.



Example of Preview

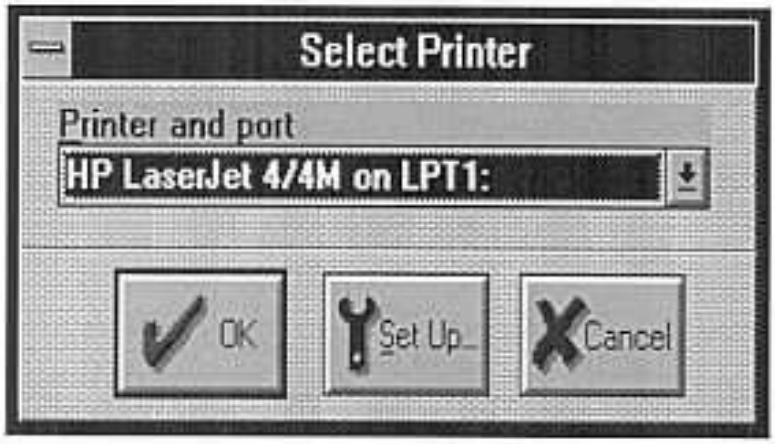
Once all adjustments have been effected, click "Print" button to start printing. ***WinLog*** transfers printing information to print manager of Windows which in turn will then activate the Windows preset "standard" printer.

If no printout is required, simply click "Cancel" button and ***WinLog*** will close the dialog "Printer Setting" without activating printing.

Command: Select Printer

The menu command "Select Printer" of menu "File" selects the printer for printing-out sampling values. ***WinLog*** will only select those printers of plotters that have been pre-installed by Windows "System Control".

The dialogbox "Select Printer" appears:



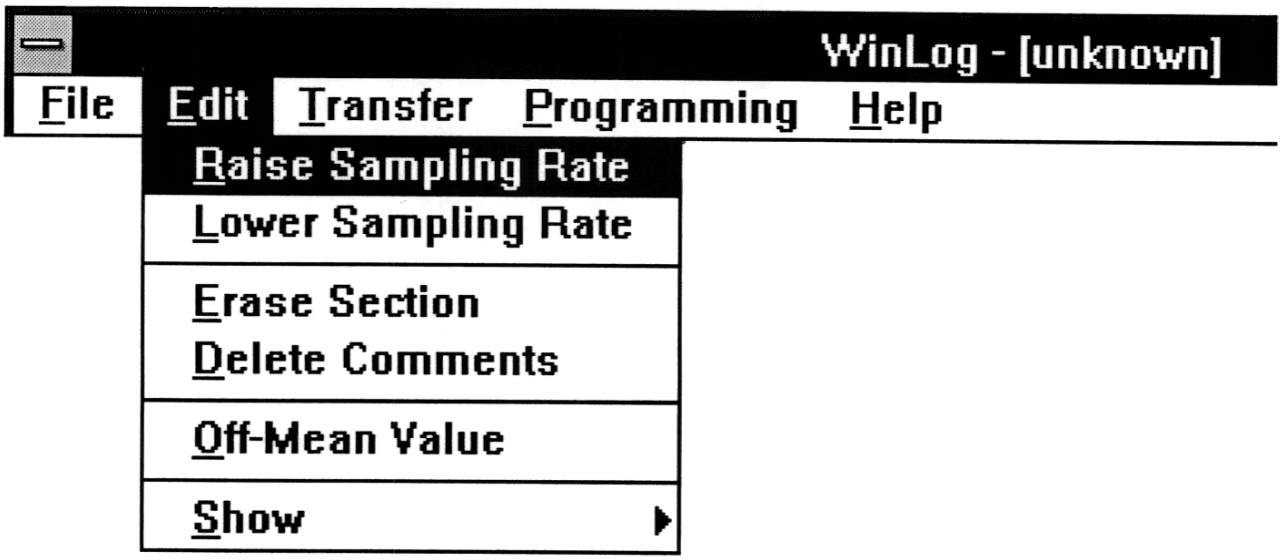
Dialog: "Select Printer"

WinLog indicates standard printer. To select alternative printer/plotter you will have to open combo box by button to the right and click printer option.
For special adjustments click "Set Up" button. This allows special printer setting.
For attractive printing quality select "landscape" format of print-out. In case your printer supports setting "True-Type printing graphic" of menu "Options" you will have to click that one.
After having completed all settings, you will return to ***WinLog*** menu by "OK" clicking.

Note:
Non appearance of dialog window when clicking command "installing printer", means no printer had been installed so far. Install a printer/plotter by means of "System Control" and your Windows software.

5. Menu: Edit

The menu "Edit" serves post-recording amendment and editing of sampling values. Clicking "Edit" produces menu commands:



Menu: "Edit"

Command: Sampling Rate Higher

In order to compare sampling values recordings with differing sampling rates, those sampling rates need alignment. This command allows increasing sampling rate of recording sequence. Clicking this command, ***WinLog*** will increase sampling rate post-recordingly, by doubling the sampling rate thus simulating higher rate, e.g. from originally 1s rate to 0.5s.

While creating at least double the number of sampling values, ***WinLog*** erases those recorded sampling values in excess of storage capacity. Kindly note this fact when executing command "Sampling Rate Higher". The more sensible solution would be "Sampling Rate Lower" as there will be no loss of sections of sampling values.

Command: Sampling Rate Lower (Floating Mean Value)

In order to compress recordings or compare recordings of differing sampling rates, the command "Sampling Rate Lower" may be used.
WinLog simulates halving the sampling rate by forming mean value of two values thus creating sampling rate of 2s out of 1s. Use this command to save storage capacity during such recordings if sampling values recorded tend to showing little changes.

Floating Mean Value:

This command serves the forming of mean values, too, as ***WinLog*** forms mean values out of 2 sampling values, thus smoothing measuring curve.

Command: Erase Section

This command serves the erasure of such recording sections not used any longer. You may erase all data from a given point onward till end of recording. This assists saving storage capacity on HD or diskette.

Calling up this command a dialog box will appear by which you may determine point of time of erasure of complete sampling values, e.g. up to starting time or till end, resp.

Dialog: "Erase Section"

In case you have left a green mark with your left hand mouse key, ***WinLog*** will occupy this box with time and date of green mark (also refer to chapter 9, section "Indicating Sampling Values" for marking by left hand mouse key).

Enter now desired time and date into edit fields "date" and "time" (only if this had not been done by leaving mark yet) and select erasure either from point of time entered till start or to this end.

Click "OK" if command is to be executed, e.g. actually erasing all sampling values, or click "Cancel" to abort this procedure.

Example of typical erasing procedure:

Saving specific section of individual sampling values recording requires erasure of all sampling values recorded before and after that section. Put the sampling value marker to start of section to be stored by left hand mouse key and select command "Erase Section" and erase till "Start".
Put the marker to the end of sampling values section to be stored and again select "Erase Section". This time you will erase till "End".

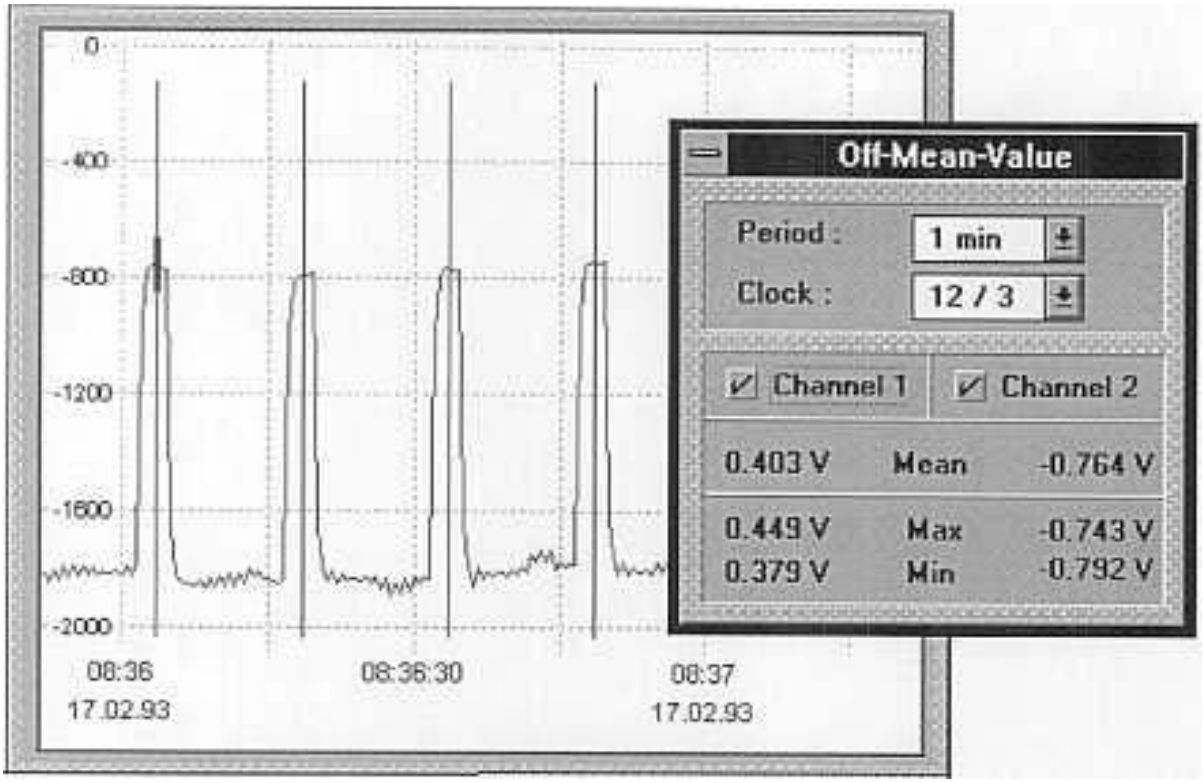
This procedure will just leave the section desired while all unwanted sampling data before and after this have been erased. You may now store this abbreviated section.

Command: Delete Comments

This command enables complete erasure of comments entered into recorder window. Also see Chapter 8: "The ***WinLog*** Recorder" and section "Entering Comments".

Command: Off-Mean Value

WinLog enables particularly simple calculation of switch-off potential mean values. Having selected command "Off-Mean Value", the dialog box will show "Off Mean Value" supporting calculation of mean values of switch-off potentials.



Example of Forming Off-Mean Value

Enter into list box "Clock" pulse of current recording. Click left hand mouse key to sampling value of switch-off phase.

WinLog automatically marks this point as well as at each future occurring switch-off phase in accordance with dialog window preset amount of calculations.
With a clock pulse of 12/3 and calculation period of 1 minute, 4 switch-off phases will be utilized for the calculation and displayed, e.g. 30 minutes with 120 phases.

You are now offered the possibility to click each particular point of potential curve and ***WinLog*** will display the thus calculated mean value and will mark all positions of future occurring switch-off phases, which are going to be used for calculations.

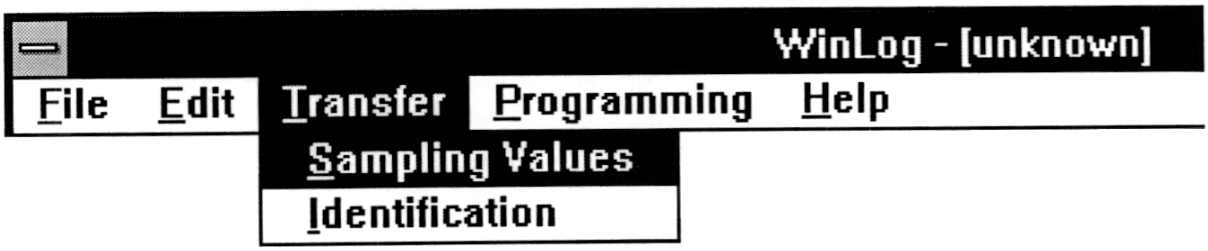
You may terminate this formation of mean values by closing dialog box "Off Mean Value". Just double-click the left hand upper corner of dialog window. ***WinLog*** will cancel all off-markings and allows re-use of normal operations of recorder window.

Command: Display

Clicking this command opens another menu window allowing you to select marking of channel 1 or 2 and/or insertion of comments. Make sure that at least one channel have been marked otherwise no channel will be displayed in recorder window or sampling values' table.

6. Menu: Transfer

The command "Sampling Values" serves to transfer sampling data from Minilog to PC as well as Minilog identification by it's identification code.



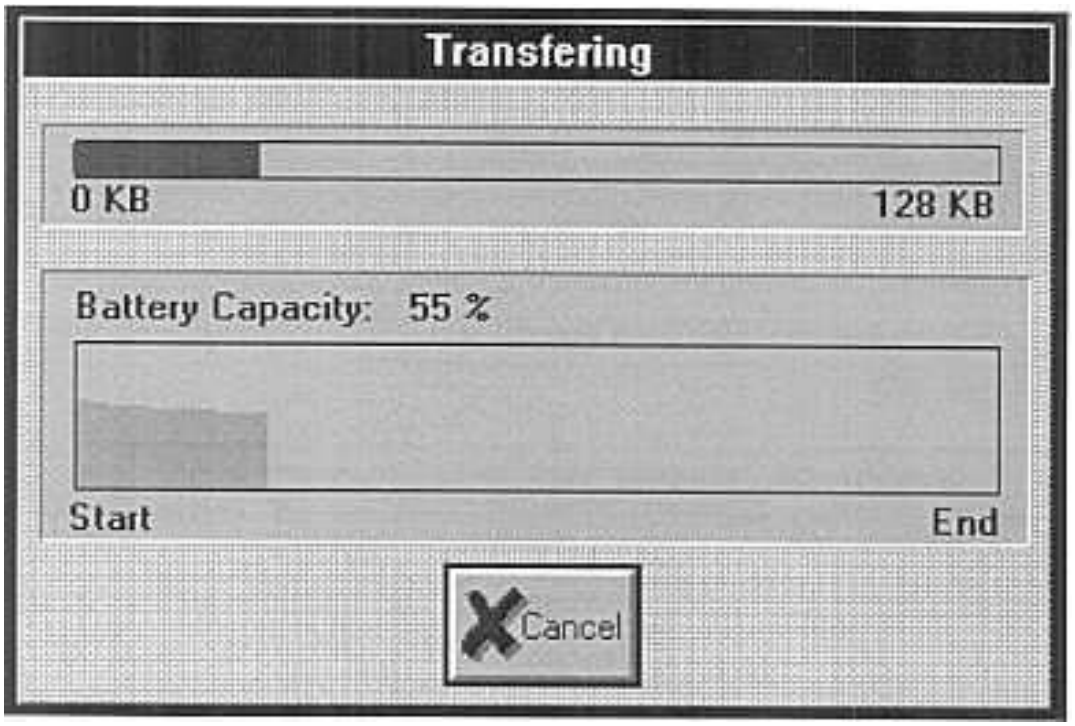
Menu: "Transfer"

The command "Sampling Values" serves the transfer of sampling data recorded by Minilog to PC. Minilog can be transferred to PC as storage has been effected either on HD or diskette.

The command "identification" will always be helpful to identify Minilog connected or to indicate current battery capacity.

Command: Sampling Values

Once Minilog has been switched on and connected with PC via serial interface cable, the recorded sampling values may be transferred from Minilog. Clicking command "Sampling Values" of menu "Transfer" opens ***WinLog*** window displaying current data transmission



Dialog: "Transfer"

The upper part of dialog window will show bar expanding in length displaying bytes transferred.

A Minilog with 128 KBytes takes just 2 minutes to transfer the entire data.

The lower part of dialog window displays battery capacity during recording period from start to end. The height of bars represents battery capacity measured. In the course of the recording the battery bars will grow accordingly smaller as the battery current is being used.

WinLog indicates battery capacity of 50% and higher by green, less than 50% but higher than 25% by amber, and red if battery is totally discharged or less than 25%.

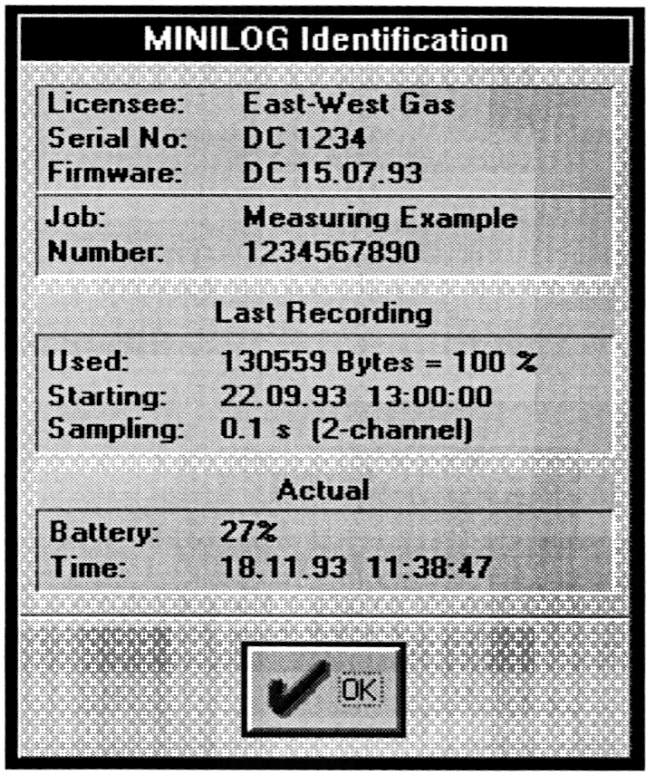
Should you want to abort transfer procedure, simply click "Cancel" and ***WinLog*** will terminate the transfer procedure thus leaving at your disposal those data which have been transferred so far.

Note:

Minilog's sampling values will not be erased when transferring to PC, but remain available for renewed transfer. Only a new recording will erase such data in MiniLog.

Command: Identification

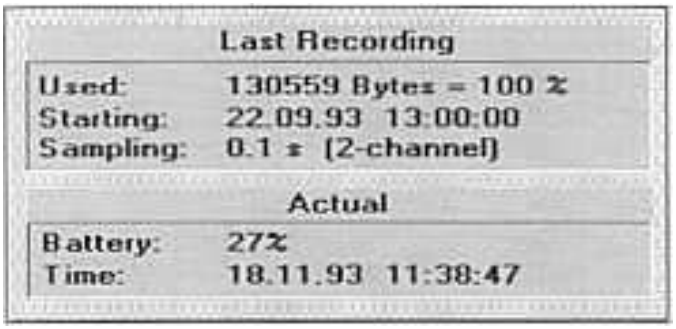
Once you have programmed Minilog with identification code such data may be checked at any time by command "Identification" of menu "Transfer". Simply click "Identification" and dialog box will display identification code of Minilog connected.



Dialog: "Identification"

WinLog will show in dialog box all essential data of connected Minilog. You will see licensee, serial number together with pre-programmed identification (job an task number)

In addition ***WinLog*** will display capacity occupied of Minilog sampling values storage. It displays current recording procedure carried out with this Minilog unit. Starting time and date of current recording, including sampling rate and channel numbers (single or dual channel) will be indicated.



Recording Details and Battery Condition

Note:

In case Minilog had terminated previous recording prematurely due to discharged battery, the code "LP" (meaning "low power") will appear behind "Used" indicating low battery during recording.

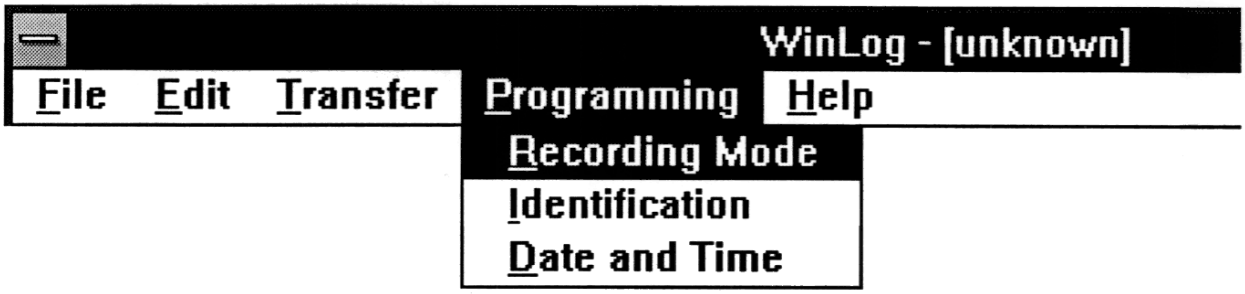
Indicating Battery Capacity:

Command "Identification" of menu "Transfer" also serves to display current capacity of Minilog battery. The actually available battery voltage will be tested and calculated in relation with new battery voltage resulting in calculation of currently available capacity of Minilog battery.

The calculation factors refer to using Alkaline type batteries and logically will not apply to other battery types e.g. Nicad rechargeable or Zink-Carbon type.

7. Menu: Programming

Menu "Programming" serves to prepare Minilog for recording task with the following commands appearing when clicking menu command "programming":

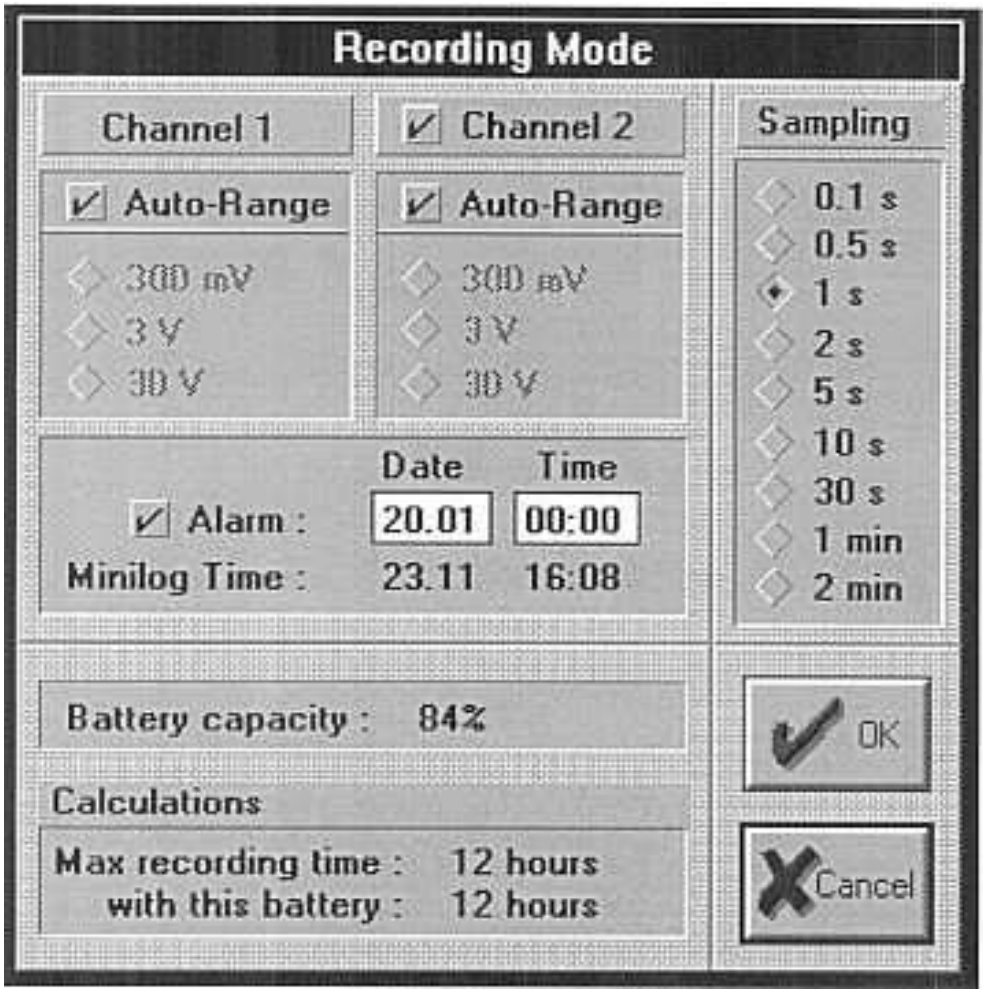


Menu: "Programming"

Command: Recording Mode

In order to prepare Minilog for a pre-programmed you may use command "Recording Mode" to pre-set all adjustments necessary for a recording. Kindly refer to Minilog Manual for detailed description of standard as well as pre-programmed recording.

Once having Minilog correctly connected, clicking command "Recording Mode" will open dialog box displaying the settings of connected Minilog:

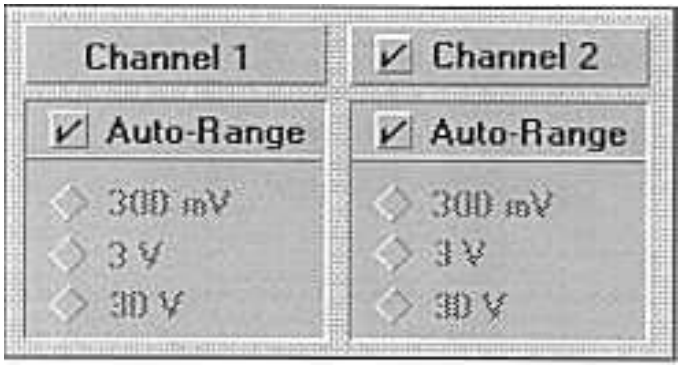


Dialog: "Recording Mode"

The dialog window shows boxes with radio buttons of measuring ranges of both channels, radio-buttons of sampling rates, checkbox for alarm setting and the current battery capacity of connected Minilog.
At the same time max. recording time available (depending on sampling rate and channel numbers selected) as well as real recording time available (depending on battery capacity) are being displayed.

Selecting Measuring Range

Radio buttons within group of channel 1 and channel 2 allow selection of measuring ranges. In case of having marked "Auto-Range" you may disactivate this feature clicking onto respective check box and select one of three fixed measuring ranges for pre-programmed recording. Clicking again on "Auto-Range" reactivates respective channel's Auto Range mode and not available measuring range indications are wallpapered grey.



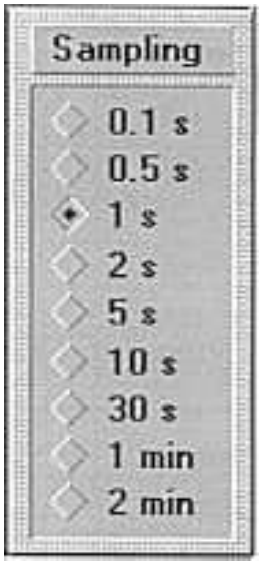
Range and Channel Selection

Selecting Channel:

As simple as above clicking check box "channel 2" disables recording capability of that channel, and effecting doubling recording capability of channel 1.

Selecting Sampling Rate

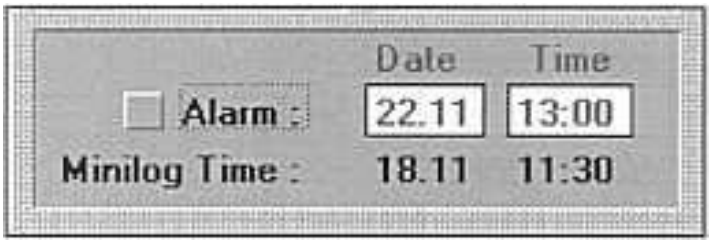
Selecting "Sampling" group allows pre-selection of sampling rate used when pre-programmed recording. You may select one of 9 sampling rates (and 8 with Minilog AC/DC version resp.). Simply click the appropriate radio button for setting. Simultaneously the max. recording capacity will be displayed at the dialogbox bottom.



Programming: "Sampling Rate"

Setting Alarm

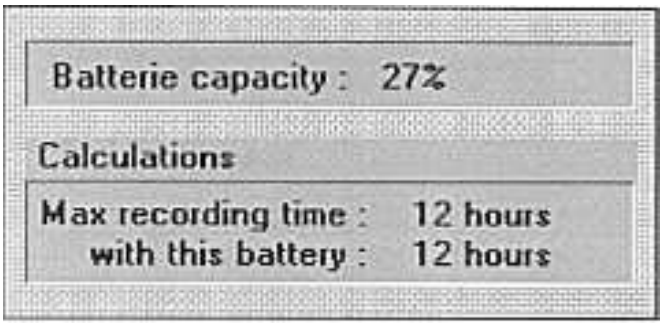
Minilog has been fitted with alarm feature allowing pre-determination of recording star-up. Starting Minilog pre-programmed recording with alarm timer ***WinLog*** activated, Minilog will wait to start recording until alarm time coincides with real time.



Pre-Setting Alarm Timer

Only after having clicked alarm box you may pre-set timer data. For setting alarm time click date or time box and enter date and time of alarm.

Below alarm setting, Minilog battery capacity and Minilog time are being displayed for checking purposes. (Minilog time will be read in by ***WinLog*** only once and will not progress as long as dialog window "recording" mode "is being displayed)



Capacity calculations and max. recording time

Battery Capacity and Recording Time:

For convenience purposes the recording capacity available will be displayed by ***WinLog*** lower part of dialog window allowing updated calculations of recording time and current capacity of Minilog battery.

Transferring Data to Minilog:

Having entered all settings click "OK" button to transfer recording mode to Minilog where they will be stored to be activated within "pre-programmed recording" mode.

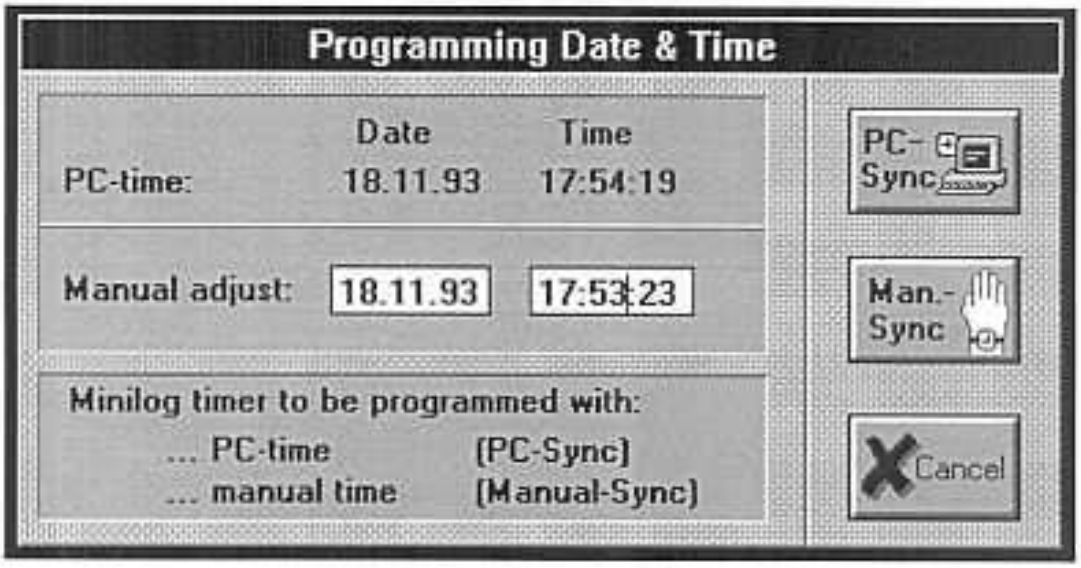
Starting standard recording, those instructions will be ignored.

Should you not want to transfer those instructions to Minilog, you will have to click "Cancel" button.

Command: Date and Time

Command "Date and Time" of menu "Programming" allows Minilog time and date to be checked and re-adjusted in case of necessity.
Minilog timer is to be readjusted after battery replacement as the integrated Minilog buffer battery does not supply power to Minilog timer, which causes timer to stop or running incorrectly.

Clicking command "Date and Time" the following dialog box is displayed:



Dialog: "Programming Date & Time"

WinLog shows in line "PC-time" as time of PC, below "Manuale adjust" as Minilog time. While "PC-time" being up-dated continually, the "Manual adjust" time of Minilog stops for re-setting as required.

Clicking appropriate edit field enables you to enter date and/or time. Using your keyboard and key "Delete" to preferably erase previous time setting before entering new time and date as required.

Having entered time as desired you will have to click "Man. Sync" exactly at that moment when Minilog timer should start coinciding with time entered. Should you have wanted to just check time of Minilog, you will have to click "Cancel" to close dialog window. Clicking a different button will misadjust timer of Minilog.

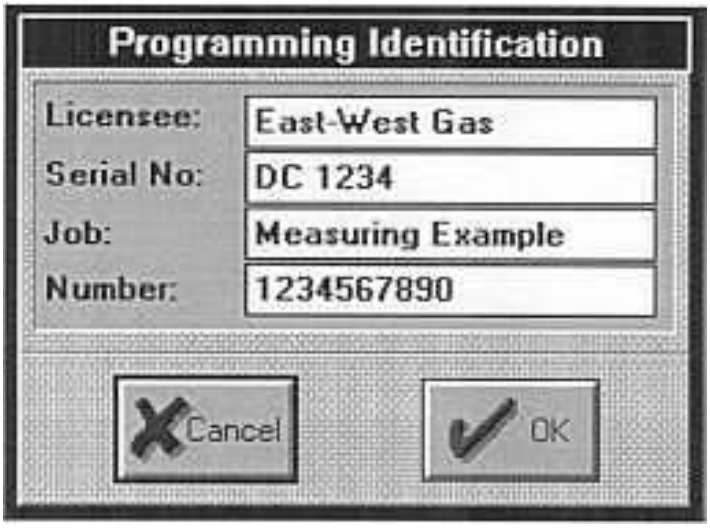
Automatic Synchronization with PC-Time:

Clicking key "PC-Sync" transfers time setting of PC to Minilog thus allowing easy synchronization of several Minilogs individually.

Command: Identification

Minilog allows instant programming with so-called "Identification" enabling individual identification of units prior to tranfer process. Programming identification offers advantages when allocating sampling values from various Minilogs after recording task for read-in purpose.

To fit Minilog with identification you will have to link it with your PC via serial interface cable. Clicking command "Identification" of menu "Programming" opens dialog box for entry of identification data:

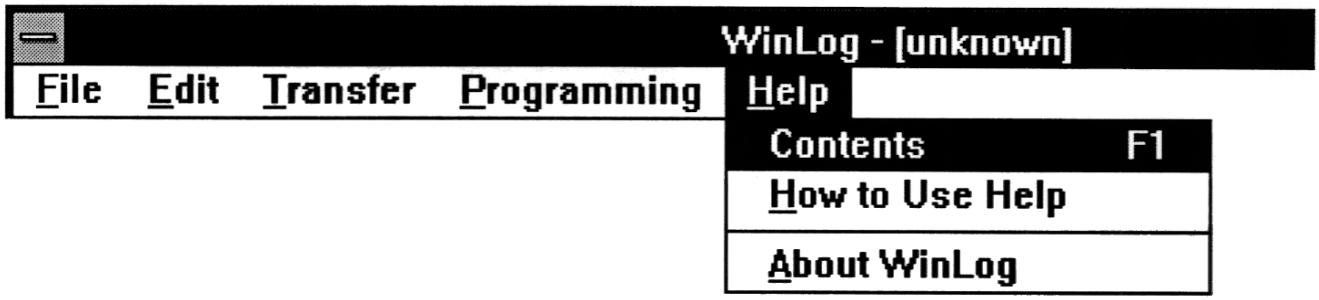


Dialog: "Programming Identification"

Click appropriate edit field to be changed. Erase previous entries with "Delete" key and enter relevant identification of "Job" and "Number".
Clicking "OK" after completion of entry transfers data to Minilog ("Licensee" and "Serial No" are possible to edited but alterations cannot be transferred to Minilog).

8. Menu: Help

WinLog "Help" menu offers instant assistance finding operations instructions even without having Operator's Manual handy.
Clicking "Help" the following menu appears:



Menu: "Help"

Command: Contents

This command opens ***WinLog*** Help-program displaying contents of ***WinLog*** Help. Click appropriate catchwords wallpapered green in help window to read about various the subjects.

For more detailed instructions as to general operations of Windows Help kindly refer to Windows manuals 3.1 or using command "How to Use Help" of ***WinLog*** as being kindly displayed on screen.

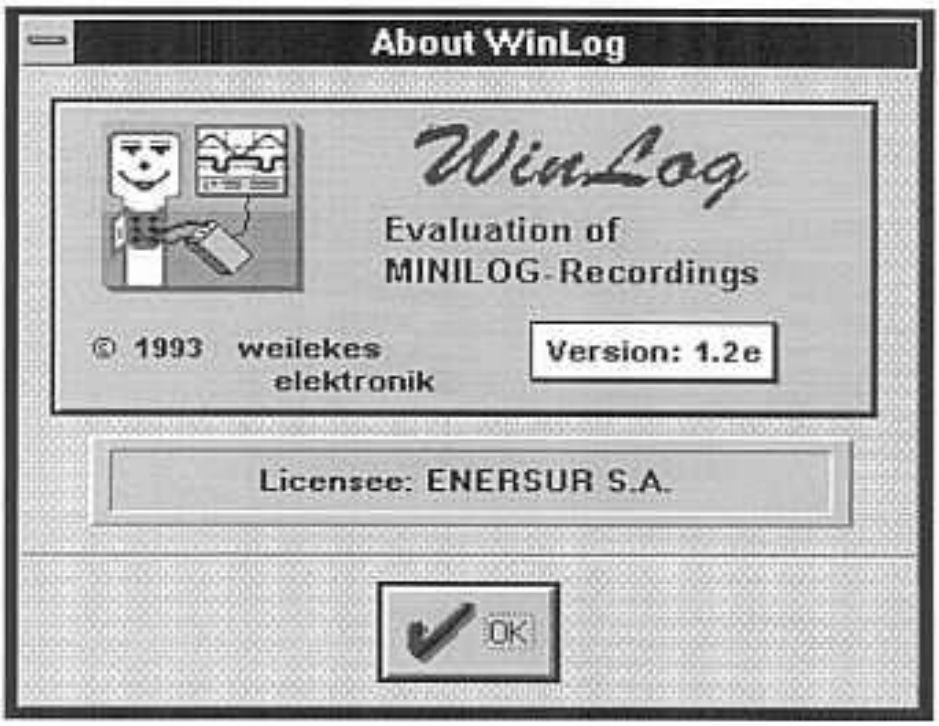
Command: "How to Use Help"

Clicking "How to Use Help" Windows offers display of those instructions of help-program that do not exclusively apply to ***WinLog***. Click command "How to Use Help" and familiarize with functions of Windows Help.

Double clicking left hand top corner of help program window returns you to ***WinLog*** at any time.

Command: About *WinLog*

Clicking command "About WinLog" enables you to call up-dated ***WinLog*** versions of software. ***WinLog*** displays current version in dialog box:



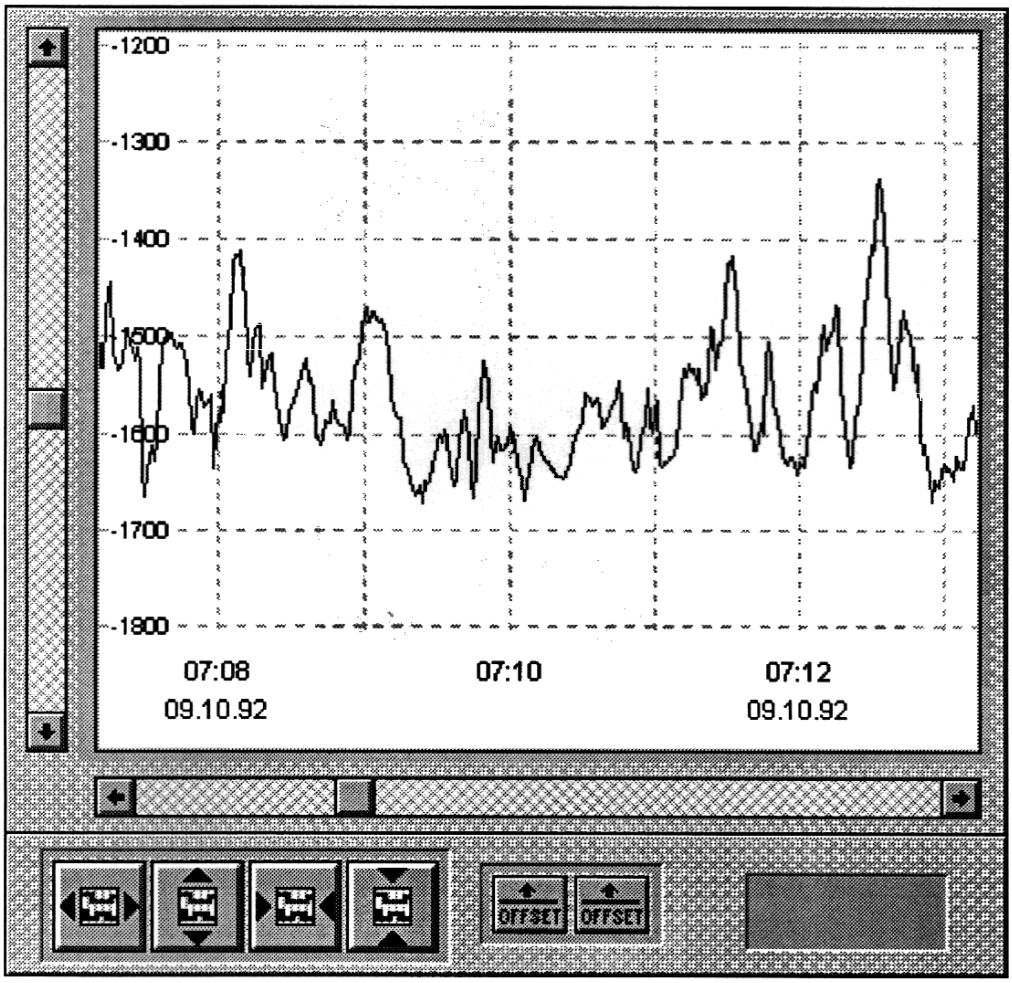
Dialog: "About WinLog"

You can close dialog box by simply clicking "OK" button.

9. The *WinLog* Recorder

WinLog recorder serves the graphic display of sampling values recorded. ***WinLog*** simulates on screen a dual channel continuous line chart recorder with functional keys. The recorder offers additional display of time and date allowing incidental allocation of sampling values and their processing.

You may vary measuring ranges (Y-axis) by stretching or reducing and at the same time shift the measuring data displayed (voltage magnifier). Likewise can this be done with time range (X-axis) including compressing.
All this can be done post-recordingly thus offering operating convenience when evaluating recordings, not available with paper-operated chart recorders.



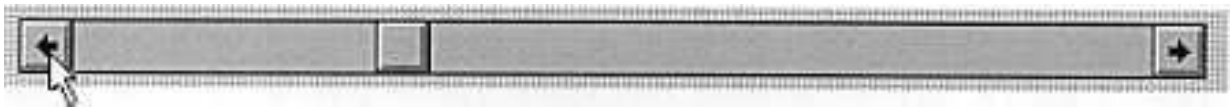
Recorder Window

Shifting Axis

Two scroll bars serve shifting of voltage and time axis. The recorder scroll bar shift voltage axis can be found to the left in vertical position of recorder window, while scroll bar to shift time axis is down in horizontal position.

Scroll bar operation conforms with Windows standard:

Slow shifting:

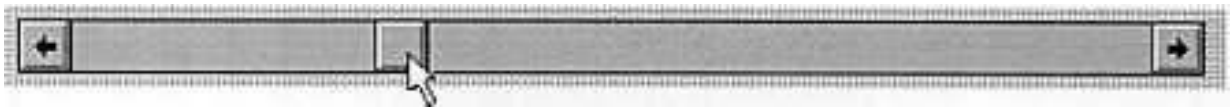


Mouse click on left or right hand bar arrows

Rapid shifting:

Mouse click between arrow and scrollbox

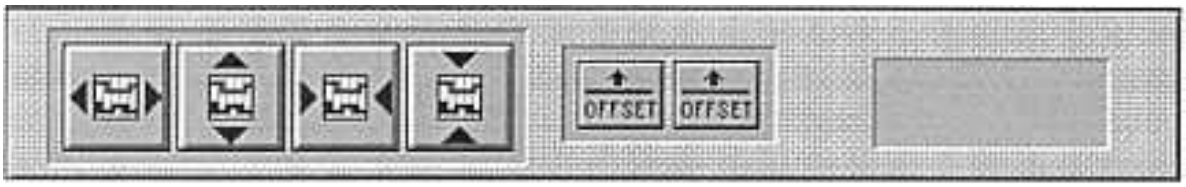
Shifting onto specific position:



Click scrollbox and pull

Recorder Control Buttons

The four buttons below recorder window serve to stretch or compress voltage and time axis. For testing, simply click one of those buttons and see what happens to display of sampling values at recorder window.



Recorder Control and Offset Buttons

Setting Offset

WinLog allows transformation of sampling values (e.g. calculation of currents from shunt-voltages measured and shunt resistance) by means of constants' addition and factor forming.
Calculation of currents with Minilog voltage measuring via 10 Ohms resistor can be effected by following formula:

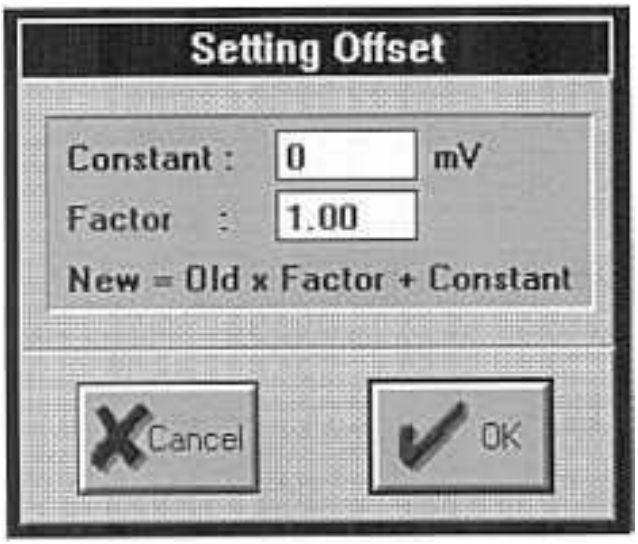
I (mA) = U (mV) / 10 Ohms
Example: 12.5 mA = 125 mV / 10 Ohms

Offset for example above:

Constant = 0 Factor = 0.1 (equals 1 / 10)

For sampling value conversion of channel 1 (blue) click "Offset" button with blue line, for channel 2 (red) click button with red line.

WinLog will open dialog box for input of constant and factor:



Dialog: "Setting Offset"

To shift channel 1 in Y-direction you may enter appropriate value in edit field: "Constant". Default is "0" (no constant).

To multiply channel 1 (for example: variation of polarity of -1.00) you will have to enter appropriate factor including 2 post-comma digits in edit field: "Factor". ***WinLog*** default will be "1.00" (no multiplication).

Having entered relevant offset values simply click "OK" and ***WinLog*** will display the measuring values calculated graphically in recorder window and numerically in table of measuring values. For reminding purposes the offset instruction will show in recorder window on top of offset keys either as blue or red "offset" indicator.

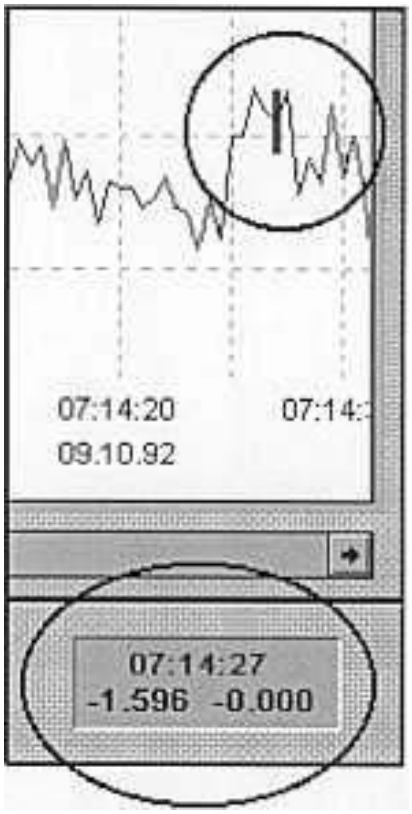
Note:

Enter constant "0" and factor "1" if you wish to disactivate offset calculations.

Displaying Sampling Values

WinLog facilitates reading out sampling values' denominations. Move mouse into recorder window and click left hand mouse key.

WinLog recognises mouse position as to time axis of recorder window and displays mouse-position-relevant sampling values of both channels including time information to bottom right of sampling value window. Simultaneously the sampling values table is being rolled into position as marked.



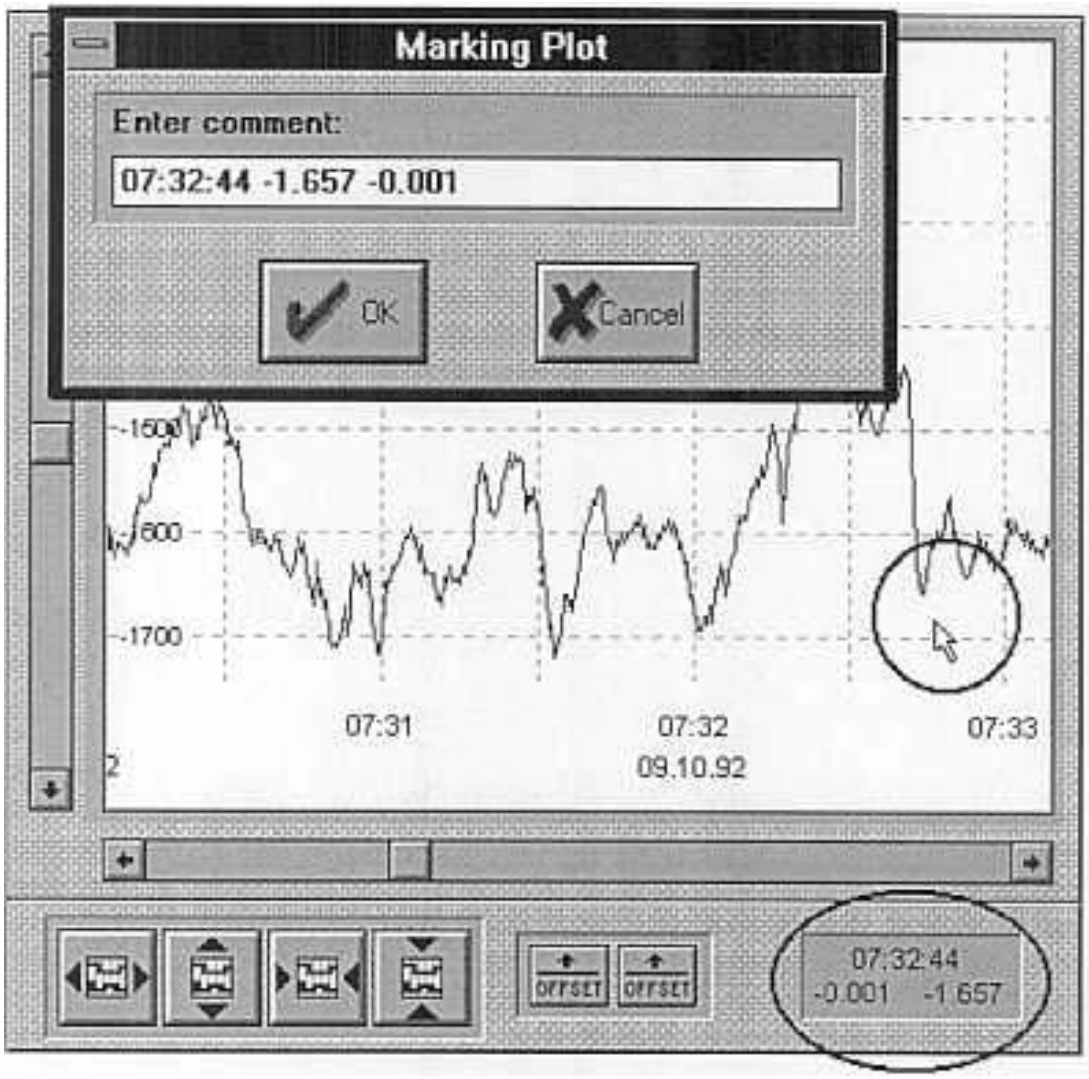
Clicking left mouse button shows numerical values

Note:

Exact definition of time position requires maximal stretch of time axis.

Entering Comments

Similar to numerically displaying sampling values by clicking left mouse button, ***WinLog*** enables entry of comments at mouse position by clicking right mouse button. Having clicked right mouse button in recorder window, ***WinLog*** will open input dialog box for comment entry.



Marking Plot with right mouse button

WinLog automatically enters time and numerical sampling values of both channels into input field. You may, however, replace this standard entry with any text of choice.

Click "OK" to enter new comment or "Cancel" if you do not want to enter such.

Having confirmed comment by clicking "OK" the new comment appears at recorder window as well as on print out together with time information and vertical line.

Erasing Individual Comments:

To erase a single comment you will have to re-position your mouse and click right mouse button at corresponding time position to be followed by erasure of previous comment in edit field by "Delete" keying.

You may also erase entire comments by using menu "Edit" and command "Delete comments"

Note:

For accurate determination of time position (particularly when erasing comments) it is recommended to using max. stretch of time axis.

10. Table: Sampling Values

This table displays at the right hand side of ***WinLog*** window time and relevant sampling values in numerical form.

The upper part of table shows date of recording, below that showing 30 bars of sampled data together with relevant time.

Values of channel 1 will be displayed blue, while values of channel 2 are in red.

Shifting scrollbar to the right of sampling values' table enables viewing of complete recording values.
(For scrollbar operations also refer to chapter 8 section: "Shifting Voltage and Time Axis").

Sampling Values' Table

11. Recording Procedure (Short Description)

Before Recording

1. Connect Minilog with PC via serial interface cable,
   switch Minilog on and start ***WinLog***.
   Dead LED of Minilog indicates discharged battery.
   Switch Minilog off, replace battery and switch Minilog on again.
   (Note: Replacing battery requires re-setting of Minilog timer
   prior to recording start-up.)

2. Check Minilog timer on screen by menu "Programming"
   and command "Date and Time".
   In case of necessity re-adjust and transfer to Minilog
   by "Manual-Sync" or "PC-Sync".

3. Check Minilog identification by menu "Programming"
   and command "Identification" and reprogram "Job" and "Number"
   in case of necessity and confirm by "OK" for transfer to Minilog.

4. In case Minilog is to record per pre-programmed mode
   (also refer to Operator's Manual of Minilog) menu "Programming"
   and command "Recording Mode" apply.
   Check settings of measuring range, sampling rate, alarm time,
   battery capacity and possibly recording period recording capacity.
   Having found all settings correct, "OK" clicking will transfer them
   to Minilog.

5. Switch Minilog off and remove interface cable.
   The unit is ready now for recording after having been installed
   on site and started.

After recording:

1. Connect Minilog with PC via serial interface cable,
   switch Minilog on and start ***WinLog***.

2. Dead LED indicates discharged battery.
   Switch Minilog off, replace battery and switch Minilog on again.
   (No sampling values lost during battery replacement procedure)

3. Menu "Transfer" and command "Identification" allows identification
   of Minilog including indication of storage capacity occupied,
   sampling rate and channel numbers used for recording.

4. Selecting menu "Transfer" and command "Sampling Values"
   starts ***WinLog*** to load sampling values of Minilog into PC.
   Watching battery condition display during transfer shows if Minilog
   has terminated recording prematurely due to discharged battery.

5. After completion of ***WinLog*** data transfer, save sampling values
   by menu "File" and command "Save".

6. Minilog is ready now for further recording tasks).
   The presently recorded sampling values are saved on HD or diskette
   and may be edited without Minilog present.

12. Recording in Details

In order to familiarize with the multitude of Minilog hardware and ***WinLog*** software features and utilizing them optimally, it is recommended to try different recordings of sampling tasks. By doing so, you will be able to use all functions fully within a short period of time.

In order to facilitate this familiarization, we will present test sampling case and explaining all operational steps necessary.

Recording Test Case:

The task is to record with Minilog sampling values of potential of pipe interfered with waste currents and simultaneously the potential of foreign pipe to evaluate possible influences.

In order to evaluate the off-potential and the influencing effects of the foreign pipe, the potential of pipe will be subjected to clock pulses of 12 s on and 3 s off by means of radio or quartz controlled timer switch. This recording should not only emphasize particular values of potentials during periods of low waste currents, but also such periods with high currents.

In accordance with above recording task, the following settings apply to Minilog recording:

1. **Sampling rate: max. 2 s**
   With a sampling rate higher than 2 s (e.g. 5 s or 10 s resp.) an exact determination of sampling time of switch-off potential would be impossible due to inaccuracy of Minilog timer (1 s/day) thus allocation left to chances.

2. **Dual Channel Recording**
   Recording with two channels, Minilog channel 1 serves to record pipe potential, while channel 2 that of foreign pipe.

3. **Using Alarm Mode**
   In order to activate recording at the beginning of period of low waste currents (e.g. 0200 to 0400), Minilog offers utilization of alarm mode. This allows Minilog to be installed during normal working hours, while the recording will only take place during late night hours activated by alarm operated timer.
   Using this mode, recording of unwanted potentials will be eliminated.

4. **Using Auto-Range Mode**
   For a safe coverage of voltage ranges of foreign pipe potentials, the use of Auto-Range mode is recommended.
   This applies to most sampling tasks.
   Fixed voltage ranges are selectable if recorded voltage values float around the lower ends of measuring range limits (300 mV or 3V resp.

Determination of Minilog Settings:

Above recording requirements command use of pre-programmed recording mode of Minilog. This mode ist also demanded by using alarm mode, as this will not be available for standard recording mode.

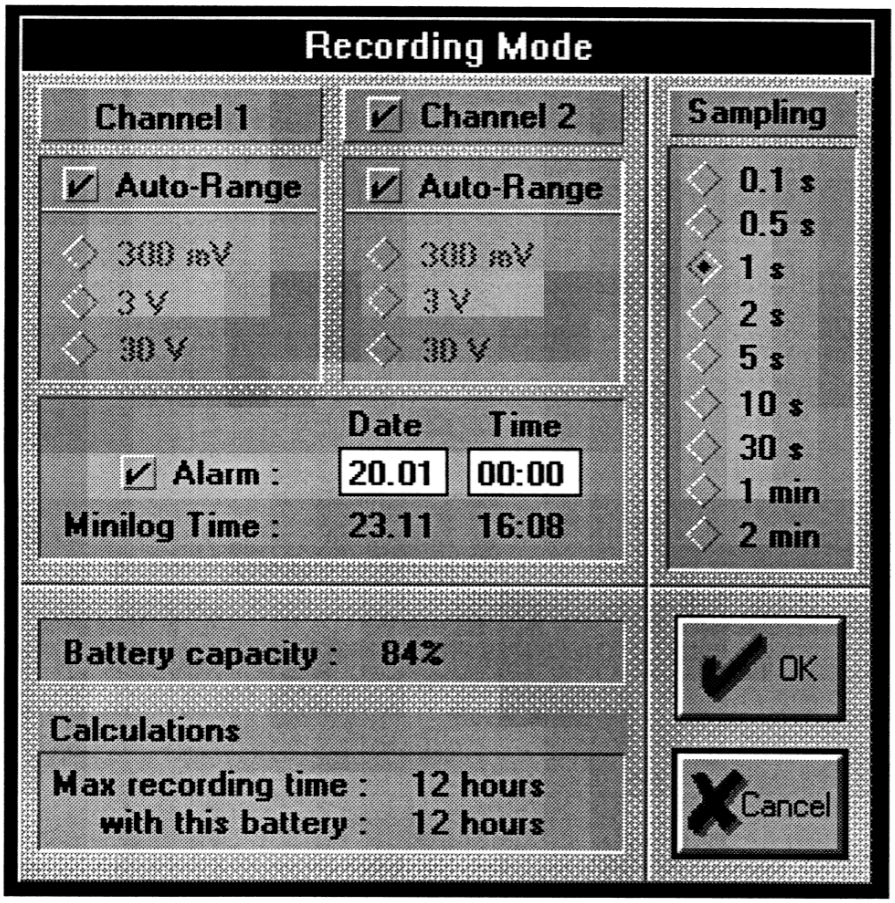
Preparing Minilog for pre-programmed recording:

Check Minilog time and recording mode pre-set and adjust if required.
Additionally check identification and re-program if necessary allowing easier identification Minilog recording data when processing.
As off-potential is best recorded over longest period possible, sampling rate of 1 s offers best compromise of period 12 h and resolution (2 switch-off values per clock pulse period) with this sampling task.
Alarm timer ist to be set to 0:00 allowing complete coverage of low waste current period (0200-0400 h).

All settings are determined by now so that ***WinLog*** may be started with Minilog connected with PC via serial interface cable. After switching on, Minilog will be ready for programming settings.

Programming Recording Mode

Having ***WinLog*** started and Minilog switched on, select menu "Programming" and command "Recording Mode". ***WinLog*** will open dialog box for programming recording mode. As to requirements of present recording, select the following settings:



Dialog: "Recording Mode"

Assuming start-up time of Minilog recording at 20.01 0:00 h for this sampling task.
Calculations shown at dialog box indicate battery capacity installed to be fully sufficient for the entire recording period of 12 hours.

Click "OK" if all settings have been found correct.

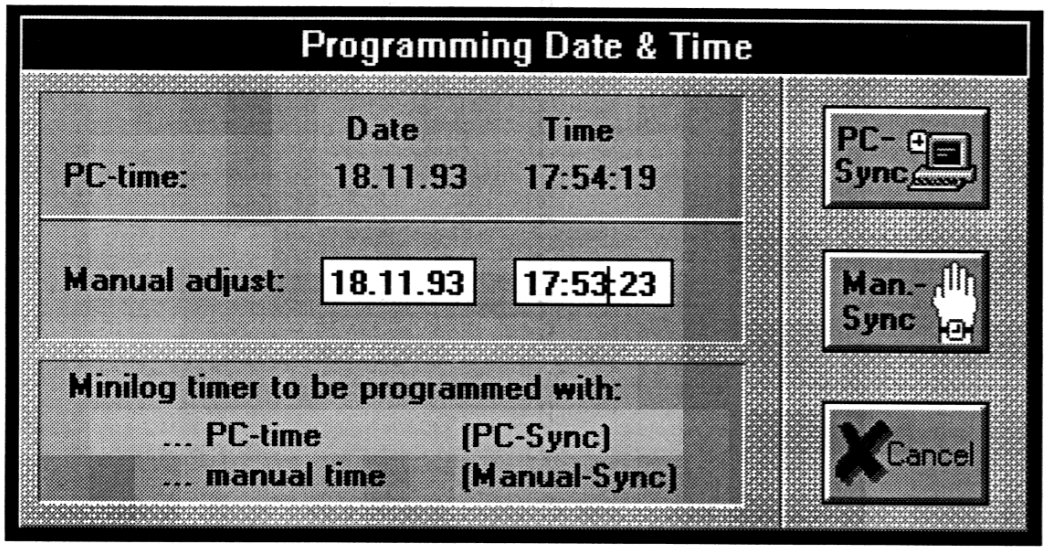
Note:

Watch red LED still lit when clicking "OK".

Dead LED, however, indicates that Minilog has auto-switched off in case there were no data exchanged via serial interface for more than 5 minutes. In that case simply switch Minilog off and on again.
With LED lit now, Minilog is ready to receive programming from ***WinLog***.

Checking and Programming Time

Next step is to check Minilog timer and re-program if necessary. Click menu "Programming" and command "Date and Time" and ***WinLog*** will open dialog box for timer programming.



Dialog: "Programming Date & Time"

WinLog will read-in Minilog time only once, while PC system time will be read-in continually and displayed in dialog window. Clicking time or date edit field allows adjustment of "Manual adjust" using "delete" key to remove previous entries and re-enter current ones.
Once having entered time, click "Man.-Sync" exactly at that moment when seconds of "Manual adjust" match.

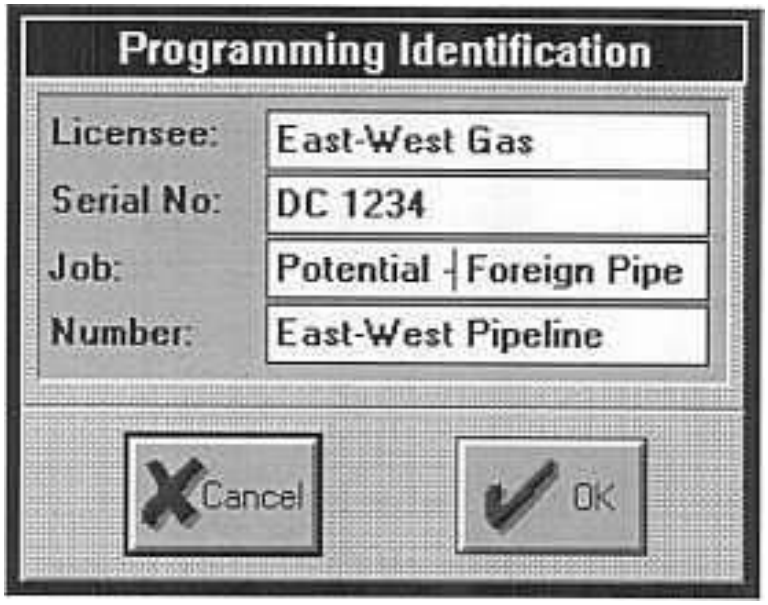
Alternatively you may transfer PC time to Minilog by simply using key "PC-Sync".

To set Minilog timer seconds accurately, best use exact quartz or radio synchronized clock. Using PC system time is fairly inaccurate and serves estimated control in most cases only.

Programming Identification

Finally you will have to check correct programming of Minilog identification allowing simple identification of Minilog when processing recording data later.

Click menu "Programming" and command "Identification" and ***WinLog*** will open dialog box for identification data entry:



Dialog:"Programming Identification"

Entering "Job" and "Number" enables later identification of Minilog unit recordings when processes.

Clicking "OK" programs Minilog identification data. Minilog is ready for use now, may be switched off and interface cable removed.

Recording

Having brought Minilog to site, prepare cabling for connecting channel 1 with potential of pipe and channel 2 for potential of foreign pipe. Common electrode is for Minilog GND-terminal.

To facilitate start-up procedure leave cabling off, start recording by depressing recording key, switch Minilog on and keep recording key depressed until LED flashes faster (after approx. 5 s). Release recording key now.

Connect prepared cabling now. A pre-programmed recording has been started with LED flashing with 5 s pulse indicating activated alarm mode.

Note:

Also refer to Operator's Manual chapter "Pre-Programmed Recording".

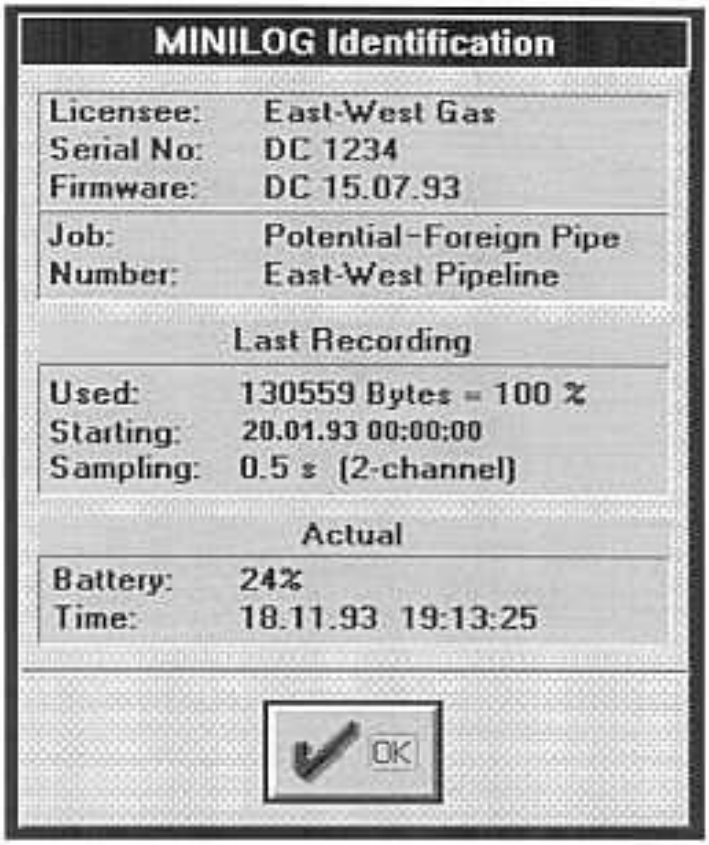
Terminating Recording

Minilog auto-disactivates if storage capacity exhausted. LED dead now indicating termination of recording. Switch Minilog off by on-off switch.

Identifying Minilog

Start ***WinLog*** and connect Minilog with PC via interface cable. Switch Minilog on. LED lights up indicating Minilog's readiness to receive or transmit data resp. (Dead LED indicates discharged battery. In that case switch Minilog off, replace battery and switch Minilog on again).

Select menu "Transfer" and command "Identification" to identify Minilog unit and receive preliminary data of recording. ***WinLog*** will open dialog window displaying identification codes of Minilog connected:



Dialog: "MINILOG-Identification"

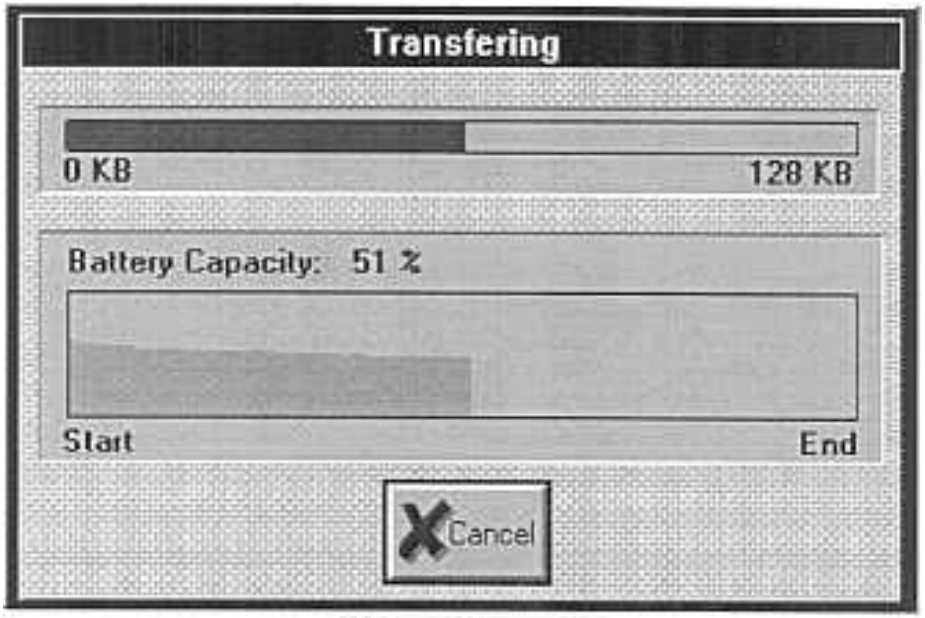
The above identification data chow Minilog to have recorded sampling data at east-west pipe with sampling "Potential and foreign pipe" confirming programming prior to sampling task. Starting time (20.01 and 0:00 h) shows correct functions of alarm mode and Minilog's storage capacity to be fully occupied (100 %).

Next step now ist transfer sampling values from Minilog to PC. Click "OK" to close dialog box with identification data.

Transferring Sampling Values to PC

Make sure that Minilog LED is lit prior to clicking command "Sampling Values" of menu "Transfer" to start transfer. Should LED be unlit meantime, switch Minilog of and on again.

WinLog will open transfer window displaying graphically amount of data already transferred with simultaneous display of battery condition during recording procedure.



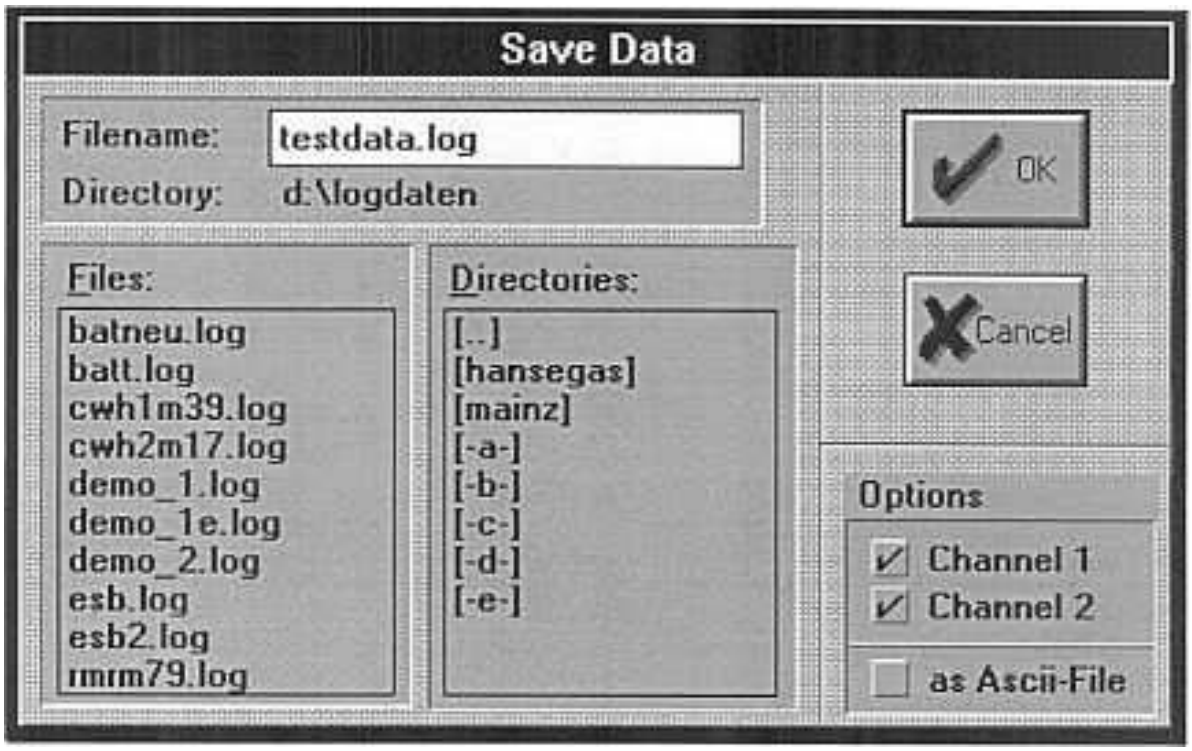
Dialog: "Transfer"

Upon completed transfer of sampling values to PC, ***WinLog*** closes dialog box "Transfer" allowing viewing sampling data at recorder window inclusive of sampling values' table.

Backing-up Sampling Values on HD

It is vital to back-up recording data on either HD or diskette. Without this all sampling data would be lost once having ***WinLog*** and would have to be re-exported from Minilog. This would be impossible, however, once Minilog unit had been deployed for another sampling task. To avoid. this it is recommend to immediately secure data after transfering.

Select menu "File" and command "Save" to save sampling values. ***WinLog*** will open dialog box to enter file name and directory:



Dialog: "Save Data"

WinLog will list actual directory (here: d:\logdaten). You may also select diskette drive "A:" at listbox "Directories", to store sampling values on diskette. This concludes sampling values' recording procedure allowing to view sampling values or have them printed by either printer of plotter.

Appendices

Appendix A:

Operational Instructions: LogPlot and Log Text

LogPlot and **LogText** serve to display sampling values of Minilog during recording.

Connect recording Minilog unit via first serial interface with PC and start **LogPlot** or **LogText** resp.

Logplot displays simultaneously during recording of Minilog the sampling values as continuous lines, while LogPlot displays such digitally. Use of **LogPlot** requires laptop or PC of 286 and VGA min. with sufficient computing capabilities and **LogPlot** min. requiring previous models like 8088 or 8086 CPU resp.

You may use **LogPlot** and **LogText** ***WinLog*** - independent in conjunction with a PC not operating Windows system.

For that purpose, transfer the following files to HD of PC to be used:

For **LogPlot**:

LOGPLOT.EXE
EGAVGA.BGI
LITT.CHR

For **LogText**:

LOGTEXT.EXE

Appendix B:

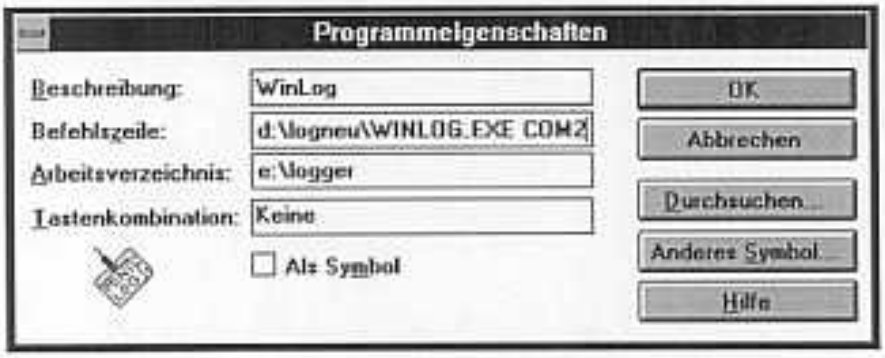
Changing Serial Interface Port for *WinLog*

WinLog uses factory-installed first serial interface port (COM1:) for data transfer to Minilog. Should you like to use another serial port for data transmission with Minilog, you will have to change ***WinLog*** "Program Description".

Changing "Program Description" of *WinLog*

Start Windows and click ***WinLog*** icon (no double click) to have wallpapered-blue logo ***WinLog*** appearing. Select menu "File" of program manager and key <Alt> + <RETURN>.

A dialog box will open allowing you to change program description of ***WinLog***:



Dialog: "Program Description"

Enter name of interface required in capital letters into command line after "WINLOG.EXE". Press <RETURN> or click "OK" upon completion of entry.

The example above shows entry of second serial interface port (COM2:)

Starting ***WinLog*** now, Minilog will wait for program at serial interface programmed with program description