elproLOG ANALYZE

Operation Manual

from elproLOG ANALYZE Version 3.60 upwards

Table of contents

Used symbols & identification codes

(i)	Notes

⚠	**IMPORTANT INFORMATION OR WARNING**

☞ Reference to further chapter [xxx / yyy / zzz; e.g. 2.2.6 *Menu - View*/ 4. Report / Add Report Entryl] or document

(i)	In the interest of our customers, we reserve the right to make any changes resulting from technical advances. Therefore, schemes, descriptions and extent of delivery are subject to change without any notice! This manual is valid as from software release 3.6x

1. Introduction

This operating manual provides a step-by-step description of the individual software functions in the elproLOG ANALYZE standard version.

Refer to the relevant operating manuals for datalogger-specific functions.

CD-ROM

The elproLOG ANALYZE software is delivered on a CD-ROM, labeled as follows:
Version 3.x.y Setup Release Ry
This CD-ROM provides all the up-to-date software modules. The exact version number of the elproLOG ANALYZE software can be found in the 3.6x Ry ReadMe file.

The software elproLOG ANALYZE is available in 2 versions:

- Both versions comprise the scope of operation of the elproLOG ANALYZE standard software for operating dataloggers and evaluating data points.
- Version elproLOG ANALYZE QLS has an audit trail function and is validated in accordance with 21CFR11.

Qualification;
SE3202E

Refer to the relevant documents for information about installation, network functions, qualification and the various datalogger types.

> The "ReadMe" file contains information about the newest functions.
>
> See SE3401E elproLOG ANALYZE for information about hardware and operating system requirements

Line charts
Tables
Individual data points

The software elproLOG ANALYZE can be used for simple and uncomplicated:

- adjusting of the measuring and time span for logging procedures.
- reading in and evaluating the data collected by the datalogger.

ELPRO dataloggers

Depending on the module type, you store temperatures, relative humidity or freely configurable physical quantities.

ECOLOG, ECOLOG-NET, HAMSTER, HOTDOG, HOTBOX and Libero are ELPRO products

1.1 Password protection

When the elproLOG USER program is used for user administration, a user name and password are required to start elproLOG ANALYZE QLS.

The password can be changed in menu Help.

☞ *2.2.7 Menu - Help*

1.2 Compatibility of logger files

All mdf files from the first version of elproLOG ANALYZE upwards can be evaluated with the current version.

1.3 elproLOG ANALYZE supports the following languages

Evaluation program	**Help files**
- German	German
- English	English
- French, Italian, Spanish	English

Function key [F3]

It is possible to swap from one language to another at any time during the program run with function key [F3].

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2. Working with elproLOG ANALYZE

> ⚠️ **FOR AN INTRODUCTION TO WORKING WITH PROGRAMMS ELPROLOG ANALYZE AND ELPROLOG ANALYZE QLS, ALSO SEE THE INSTALLATION MANUAL, DOCUMENT SE3401BE.**

2.1 Icons
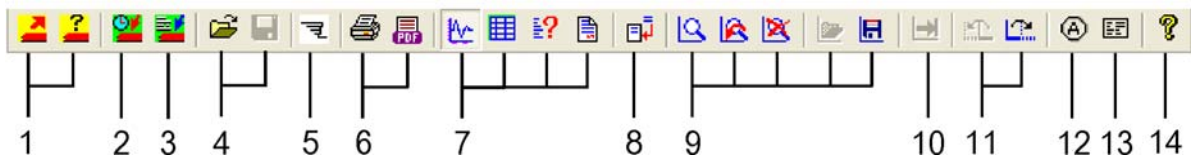
Legend to the icons

No	Chapter	About
1	6.2.1 *Standard mode*	Read out datalogger data/status
2	7.1 *Datalogger Setup*	
3	7.2 *Extended Setup*	- Define alarm thresholds - Set date & time - Set date of calibration check - Programming of battery change time
4	2.2.1 *Menu - File*	- Open - Save
5	2.2.1 *Menu - File*	Import Libero Data
6	6.4 *Printing*	
7	6.3.1 *Graph* to 6.3.4 *Report*	
8	2.2.3 *Menu - Edit*	Add Report Entry
9	2.2.2 *Menu - Zoom*	- Window - Previous zoom - Full range
	6.5 *Zoom*	- Open Zoom - Save Zoom

Legend to the icons

10	2.2.3 *Menu - Edit*	Next sensor
11	2.2.2 *Menu - Zoom*	- Skip forward - Skip backward
12	6.3.7 *Marker points*	
13	6.4.3 *Printout Description*	
14	2.2.7 *Menu - Help*	

2.2   Menus

2.2.1   Menu - File

```
1  Readout Datalogger              Ctrl+N
2  Read Status                     Ctrl+R

3  Data read with auto-save mode

4  Select Logger...                F4
```

1. Read out datalogger

   All the logged data are read out. It is possible but not compulsory to enter a description of the data.

   ☞ 6.2.1 *Standard mode*

2. Read Status

   Only reads the status of the datalogger. The status is shown directly on the monitor. The status can not be saved.

   ☞ 6.2.1 *Standard mode*

3. „Data read with auto-save mode

   The dataloggers are read and the data are saved automatically to the predefined directory.

   ☞ 6.2.2 *"Data read with auto-save" mode*

4. Select logger

   A fast and simple function for selecting dataloggers. The dataloggers in the selected gcf file (see SC3001D, elproLOG CONFIG Operation Manual) are available. After selecting the required logger, you can continue with reprogramming or evaluating.

   ☞ 7.1 *Datalogger Setup*

5	Datalogger Setup...	Ctrl+D
6	Extended Setup...	Ctrl+E
7	Open...	Ctrl+O
8	Save	Ctrl+S
9	Save As...	
10	Import Libero Data	
11	Overlay logger data...	

5. Datalogger Setup

The measuring range, logging period, logging mode, etc. can be set

☞ 7.1 *Datalogger Setup*

6. Extended Setup

This menu can be used to make module-specific adjustments to some datalogger modules.

☞ 7.2 *Extended Setup*

7. Open

Opens a mdf file. The current version opens all files which were created with earlier versions.

8. Save

9. Save As

The current data are saved as mdf file under the file name shown in the working directory. "Save As" opens automatically if no file name has been defined.

☞ 2.2.5 *Menu - Options* / Program Settings.

10. Import Libero Data

This function imports pdf files from the Libero datalogger. The imported data can then be used like normal pdf files.

11. Overlay logger data

This function provides a simple method to compare several graphs. For the conditions which enable overlaying and for additional functions:

- Set a reference point
- Moving line charts

☞ 6.3.6 *Overlay data*

12 Remove Overlaid Logger...

13 Print...   Ctrl+P
14 Print Preview
15 Print Setup...
16 Edit Printout Description...

17 Create PDF

12. Remove Overlaid Logger

Previously overlaid data can be selected and removed.

☞ 6.3.6 *Overlay data*

13. Printing

First window "Print Selection" is opened. After the information to be printed is selected, the Windows Print window opens.

☞ 6.4.1 *Print Setup*

14. Print Preview

Preview of the graph for printing.

☞ 6.3.1 *Graph*

15. Print Setup

This menu item allows the user to make printer-specific settings. However, the set orientation (portrait / landscape format) is not used for the printed output.

☞ 6.4.2 *Print Modes*

16. Edit Printout Description

Additional information for the current graph can be added / edited.

☞ 6.4.3 *Printout Description*

17. Create PDF

Window "Print Selection" opens. After selecting the information for printing, a multipage pdf file is created and saved to the selected directory.

☞ 6.4.1 *Print Setup*

18 Send mail...

19 Export

20 1 elproLOG361 Messen MarkPoints
   2 557428_Test Alarmfunktion-20090421-01
   3 Dokumentation 3.60
   4 Dokumentation
   5 Dokumentation 3.60
   6 elproLOG361 Messen
   7 elproLOG361 Tabelle
   8 M:\Entwicklung\...\elproLOG361

21 Exit

18. **Send mail**

   Function which enables data to be sent directly via e-mail as mdf or pdf file.

   ☞ 2.2.5 *Menu - Options* / Program Settings

19. **Export**

   The data can be saved as txt file for further processing.

   ☞ 6.6 *Exporting data*

20. **1 LA8 Climate.mdf,...**

   List of the files last worked on, thus providing easy access.

21. **Exit**

   Correct method to terminate the program

2.2.2   Menu - Zoom

1 Window
2 Date & Time

1. **Window**

   A red crosshair appears. Use it to select the start of the required zoom area. Click to set your selection. Then drag the red rectangle until the required section is marked. Click again to set the right bottom corner of your selection (left mouse button). The selected rectangle is now zoomed to full screen size. To zoom at the page borders, it is best to start outside the data area and then select the required window size.

2. **Date & Time**

   Specifies the zoom range using time / date

3 Time axis ►
4 Left axis
5 Right axis
6 Autozoom left axis
7 Autozoom right axis

8 Skip forward
9 Skip backward

10 Previous zoom

11 Full range

3. Time axis

   Click this menu to get the following selection:
   - Hour
   - Day
   - Week
   - Month

   Click with the mouse to select the required time axis setting (horizontal axis). Use the magnifying glass to select the required range, e.g. 1, 2 or 3 hours. Doubleclick with the magnifying glass in the area to be zoomed to extend the selection.

4. Left axis

5. Right axis

   The axes can be extended manually, independent of the time axis. Doubleclick with the magnifying glass in the area to be zoomed to extend the selection.

6. Autozoom left axis

7. Autozoom right axis

   The axes are set automatically to allow the measured left and/or right axis data points to fill the displayed area optimally.

8. Skip forward

9. Skip backward

   Moves the zoom window to the right or the left by one time period.

10. Previous zoom

    The window which was active prior to the last zoom command is restored.

11. Full range

    Die axis scaling is set to the default range.

    ☞ 7.1 *Datalogger Setup*

12 Extended range

13 Open Zoom
14 Save Zoom
15 Remove Zoom

12. Extended range

The axes are adjusted to the full measuring range of the sensors.

13. Open Zoom

Restores saved graph settings.

14. Save Zoom

Saves current graph settings (zoom, axes, marker points, print info with templates...).

15. Remove Zoom

Deletes saved graph settings

BY VIRTUE OF THE REQUIREMENTS OF DIRECTIVE FDA 21 CFR PART 11, THIS FUNCTION IS NOT AVAILABLE IN ELPROLOG ANALYZE QLS

2.2.3　Menu - Edit

1 Copy　　　　　　Ctrl+C

2 Display all
3 Select left axis
4 Select right axis
5 Single

1. Copy
   - a) Graph: An optimized copy of the screen graph is copied to the clipboard.
   - b) Table: The marked table contents are copied to the clipboard.
   ☞ 6.3.2 *Table* / Mark table

2. Display all

Use this command to make all the line charts for the various sensors visible again (standard).

3. Select left axis

4. Select right axis

Only the specific line charts which are assigned to the displayed axis are shown.

5. Single

The current line chart appears alone on the screen. (starting from line chart 1).

6 Single pair
7 Next sensor
8 Sensor Selection...

9 Extra Time Grid...

10 Marker Points   ▶
11 Printout description...

12 Add Report Entry

13 Overlaid Logger

14 Select zoomed data range

6. Single pair

Displays the line charts for one single sensor pair (e.g. temperature and air humidity)

7. Next sensor

In single pair mode, the next line chart is shown on the screen.

8. Sensor Selection

Display mode for any combination of the available sensors.

9. Extra Time Grid

Enables finer partitioning of the time axis interval. This function can also be invoked by activating the right mouse button in the measured value graph.

10. Marker points

Menu used for adding additional information

☞ 6.3.7 *Marker points*

11. Printout description

Additional information which can be added

☞ 6.4.3 *Printout Description*

12. Add Report Entry

Window used to enter a new comment. Previous entries can not be changed or deleted. Each entry is automatically provided with user name and creation date.

13. Overlaid data

This function allows you to compare the individual graphs.

☞ 6.3.6 *Overlay data*

14. Select zoomed data range

After changing to the table display mode, this function marks the previously zoomed line chart range

2.2.4 Menu - Statistics / Calculations

Statistic

☞ 6.3.9 *Statistical data*

☞ 6.3.10 *Histogram*

Calculations

- F-Value
  For further information about F-Value (max. 1116.34) calculation, see document: IT2100D
- Dew Point
  A new temperature line chart is generated. These line charts can be used to determine the temperature at which condensation forms. The calculation is based on relative humidity and the corresponding temperature.
- Calculate MKT...
- Calculate ageing
  For further information on MKT and the Arrhenius calculation, see document: IT2010D MKT and http//www.pharmj.com

2.2.5   Menu - Options

1   Com Port...

2   Temperature Unit...
3   Tabular display...

4   Define Min/Max...
5   Define F-Values...
6   Humidity   ▶
7   Histogram...

1. Com Port

   A dialog appears allowing the user to set the parameters for data transfer from the interface or datalogger to the PC.

   ☞ 5. *Initial settings*

2. Temperature Unit

   You can choose between °C or °F as unit of temperature measurement.

3. Tabular display
   - normal: normal scrollbar function
   - special: in addition to the normal scrollbar function, allows you to scroll page by page inside the table and jump to the table start or end.

   ☞ 6.3.2 *Table*

4. Define Min/Max

   Defines and displays the upper and lower limits for the measured values. At a glance, you can see whether the measured values lie outside or within the defined range.

   ☞ 6.3.8 *Minima and maxima*

5. Define F-Values
   For further information about F-value calculation, see document: IT2100D F-Value

6. Humidity
   - Dew Point: The user can assign the dew point temperature to a separate axis.
   - Temperature compensation: These settings are only relevant for ECOLOG TH1 / TH2 devices which were produced prior to May 2000. Please contact your ELPRO salesman if you have any further queries.

7. Histogram

   This menu item is used to define parameters for calculating the histogram.

   ☞ 6.3.10 *Histogram*

8 Define MKT...
9 Define Ageing...
10 Settings statistical data ...
_____
11 Date Format...
12 Export Format...
_____
13 Colors   ▶

8. Define MKT

9. Define Ageing

For further information on MKT and the Arrhenius calculation, see document: IT2010D and
http//www.pharmj.com

10. Settings statistical data

Selection between min/max lines or alarm thresholds (settings nur possible for ECOLOG-NET) to calculate statistics

11. Date Format

The date format can be selected. The default setting is: DD.MM.YYYY

12. Export Format

The measured values can be saved in various formats for further processing with other programs (e.g. WORD, EXCEL, etc.).

☞ 6.6 *Exporting data*

13. Colors

The following submenu opens:

- Lines: You can select the colors for the individual lines in the graph. Click with the mouse on the respective line chart number to define the color. "set to default" restores the standard colors.

  ☞ 6.3.12 *Line colors*

- Min/Max Colors: Is used to define the hatching color for the areas outside the min/max limits.

  ☞ 6.3.8 *Minima and maxima*

- Color assignment: For overlaid dataloggers, the user can choose whether the color of the individual line charts should be independent of the overlaid logger (each line chart has its own color) or logger-specific.

14 Lines...

15 Print parameters ▶

16 Program Settings ▶

14. Lines

This menu item allows the user to define the style of the axes and grid lines as well as line thickness.

☞ 6.3.11 *Line definitions*

15. Print parameters

The following print settings can be made here:

- Print Modes
  Allows you to make special print settings

  ☞ 6.4.2 *Print Modes*

- Company Logo This window allows you to select the required logo for printed forms.

  ☞ 6.4.5 *Company logo*

16. Program Settings

The following basic settings can be made:

- Default PDF Directory
- template directory
- Standard e-mail address which is used for all e-mails except when the address is changed manually.

2.2.6 Menu - View

1	Line Chart	Ctrl+L
2	Tabular Display	Ctrl+T
3	Status	Ctrl+U
4	Report	Ctrl+R
5	Alarm protocol	Ctrl+A
6	Audit Trail	
7	Communication History	Crtl+H
8	Display Min/Max	
9	Display Markpos	

The measured data from all the dataloggers can be shown as:

1. Line Chart

2. Tabular Display

3. Status

   ☞ 6.3.1 *Graph* to 6.3.3 *Status*

4. Report

   The additional information added by all the users with function "Add Report Entry" is displayed.

   ☞ 6.3.4 *Report*

5. Alarm protocol

   The ECOLOG, ECOLOG-NET or HOTBOX SE alarm protocol is displayed.

   ☞ 6.3.5 *Alarm protocol*

6. Audit Trail

   Not active in the standard version

   ☞ 3. *Additional functions: elproLOG ANALYZE QLS*

7. Communication History

   The status of the last data transfer is displayed.

   ☞ 8.2 *Communication History*

8. Disply Min/Max

   The min/max ranges are shown as lines or hatched areas depending on what predefined settings have been made.

   ☞ 6.3.8 *Minima and maxima*

9. Display Markpos

   Magnetic markings at HOTBOX Bx dataloggers are displayed.

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10 Show Digits   Ctrl+G
11 Show Sensor Numbers

12 Toolbars   ▶
13 Status Bar

10. Show Digits

Switches back and forth between displaying the calibrated measured value and the unitless measured value.

11. Show Sensor Numbers

Shows or hides the sensor numbers in the graph

12. Toolbars

Toolbars can be activated or deactivated.

- Standard
- Data read with auto-save mode

13. Status bar

The status of buttons "Num Lock", "Caps Lock" or "Scroll Lock" can be displayed.

Standard: activated

2.2.7   Menu - Help

1 Help Topics

2 Change Password...

3 About...

1. Help Topics

Invokes the elproLOG ANALYZE Help file.

2. Change Password

Use this function to change the password used by elproLOG USER.

☞ Documentation SU3001E elproLOG USER

3. About

Displays the version number of the installed elproLOG ANALYZE software and the contact details of your ELPRO representative

3. Additional functions: elproLOG ANALYZE QLS

3.1 Converting files

Logger data recorded by previous releases can be converted to a new file with audit trail by version 3.x.y QLS. Files which have been converted to QLS format can no longer be read by other elproLOG ANALYZE QLS versions.

3.2 Serial number and installation

QLS versions are registered software versions. The user must have the registered QLS serial number to run a successful installation. All other serial numbers lead to an installation which only runs in base mode. Saved configurations are protected against manipulation in accordance with directive FDA 21 CFR Part 11 by this software. To fulfill the provisions of this directive, all previous versions must be updated to this version.

3.3 elproLOG ANALYZE QLS language support

ELPRO provides all the documents required for validation in English.

If standard installation is selected, the language of the installed HELP files corresponds with the regional settings.

3.4 Responsibility for FDA 21 CFR Part 11 requirements

The elproLOG ANALYZE QLS system is regarded as a closed system according to the definitions in FDA 21 CFR Part 11. Persons who have access to the system are responsible for the contents of the electronic records.

Notes
- The electronic signature can not be used for elproLOG ANALYZE QLS data files.
- The user administration for the active system must be correctly installed.
- All users must be documented/recorded/registered in a user administration defining name, password and access rights.
- To get access to the system, each user must perform a log-in. The correct user name and password must be entered.

- At the end of each session, the user must perform log-out or a secure system which prevents unauthorized access must be used.

☞ 1.1 *Password protection*

ELPRO dataloggers are sent to destinations round the whole world. Consequently, mdf files also have to be mobile. Hence the audit trail is an additional part of each data file. It starts when datalogger reading commences.

3.5 Audit trail and action log

The audit trail consists of a time stamp which records all entries and actions: new files, conversions, save as, save configuration, changes to information or information deleted in the mdf file. All the information can be displayed on the screen and printed out as a hardcopy.

The addition action log is used to supervise user activities such as printing, sent mail and data exports which are not directly related to FDA 21 CFR Part 11 as they do not change the data.

- Full compliance with the requirements for electronic recording(s)	**Characteristics**

- Full compliance with the requirements for electronic recording(s)
- The user can send files from one destination to another.
- Security: The mdf files can only be implemented, modified and used by persons working with the elproLOG ANALYZE QLS.
- Clear audit trail of all previous modifications for the documentation.
- The audit trail can not be deleted from the mdf file.

Example

Audit trail and action log are displayed

```
File  Zoom  Edit  Statistics  Calculations  Options  View  Help

              AUDIT TRAIL and ACTION LOG

        Doubleclick on entry for more details

        ECOLOG-NET LA8 Modul ID:        8331 - V 1.07 [PN:20071792]
        Lesezeit:                       28.08.2006  16:46:46
        Modulbeschreibung:              LA8 Klima / Climate
        Datenbeschreibung:              LA8 file for OQ
        File:                           M:\Entwicklung\Dokumentation\Anleitungen\SE elproLOG ANALYZE\Test elproLOG Daten\LA8 Climate 16042009.mdf

        AUDIT - TRAIL

        Date / Time                     Computername  User (System)  User (Custom)  Action
        28.08.2006  16:47:19  (GMT +02:00)  ELPRO69     agubler        andreas        New File created (LoggerTime)
        28.08.2006  16:47:46  (GMT +02:00)  ELPRO69     agubler        andreas        File saved as 'LA8 Climate original.mdf'
        28.08.2006  16:47:55  (GMT +02:00)  ELPRO69     agubler        andreas        'LA8 Climate original.mdf' saved as 'LA8 Climate.mdf'
        16.04.2009  16:18:19  (GMT +02:00)  EC03        agubler        agubler        'LA8 Climate.mdf' saved as 'LA8 Climate 16042009.mdf'
        16.04.2009  16:24:48  (GMT +02:00)  EC03        agubler        agubler        Zoom saved as 'Dokumentation'
        16.04.2009  16:15:52  (GMT +02:00)  EC03        agubler        agubler        File converted from previous format

        ACTION - LOG

        Date / Time                     Computername  User (System)  User (Custom)  Action
        01.04.2009  16:00:14  (GMT +02:00)  EC03        agubler        agubler        Printed out Table to '\\ES06.elpro.local\HP Entwicklung'
        16.04.2009  16:20:55  (GMT +02:00)  EC03        agubler        agubler        Printed out Table to 'elproLOG PDF'
        16.04.2009  16:20:58  (GMT +02:00)  EC03        agubler        agubler        E-Mail message with file attachment created.
        16.04.2009  16:24:23  (GMT +02:00)  EC03        agubler        agubler        Data exported to export 16042009.txt.
```
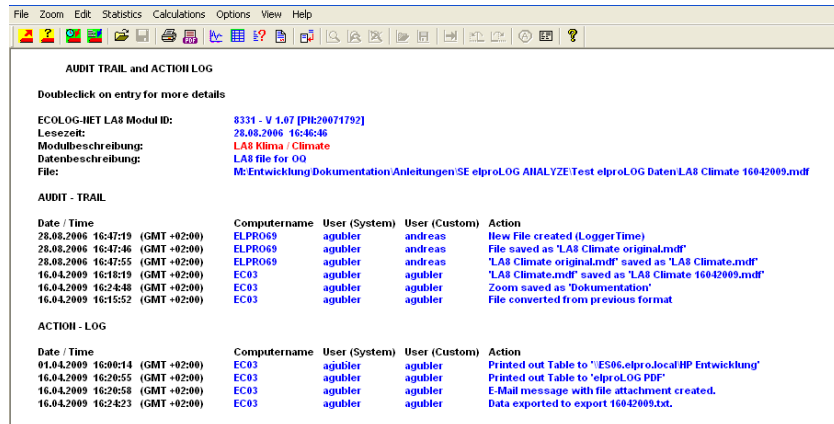
Audit Trail

Line

1   Data logger was read out

2, 3, 4 A file has been saved

5   A zoom with name: Documentation has been saved

6   The file from a previous version was converted to QLS format.

Action - Log

Line

1   A table has been printed

2   A table has been printed as pdf file

3   A file was sent as e-mail message

4   This file was exported into a txt file. Any further actions to the exported file can no longer be traced.

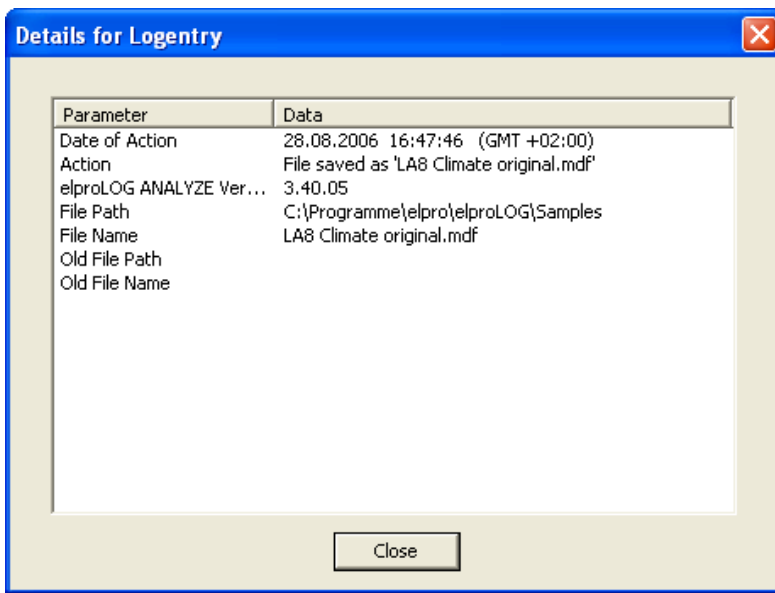**Date / Time . . . .**   These entries depend on date, time, location, PC and user.

GMT +02:00   This time format allows the user to calculate the time axis for any location where the logger was previously sited.

Details about the entry   By double-clicking the corresponding line, a window with detailed information pops up

Details for Logentry

Parameter	Data
Date of Action	28.08.2006 16:47:46 (GMT +02:00)
Action	File saved as 'LA8 Climate original.mdf'
elproLOG ANALYZE Ver...	3.40.05
File Path	C:\Programme\elpro\elproLOG\Samples
File Name	LA8 Climate original.mdf
Old File Path	
Old File Name	

Close

☞ 2.2.6 *Menu - View* / Audit Trail

4 ECOLOG-NET datalogger setup

There are 6 currently available versions, ECOLOG-NET LP4 & WP4 for 4 PT100 probes, ECOLOG-NET LH2 & WH2 for 1 or 2 T/rH probes and ECOLOG-NET LA8 & WA8 for up to 8 4 - 20mA signals.

4.1 Data logger configuration - 3 steps

Step 1 - desktop installation (LAN or WLAN)

In order to identify a datalogger in a LAN / WLAN enviroment, each datalogger is given a unique address. This address consists of three different parts. These parts are called: IP Address & Subnet Mask & Default Gateway

When using elproLOG ANALYZE & elproLOG MONITOR software, we recommend you use a fixed IP address. To avoid communication problems, the system administrator should release the network address! The address information must be entered manually to each datalogger.

The shown IP address, subnet mask and default gateway are examples only! 🖉

There are three classes of public IP addresses

|		
Class A	10.0.0.1	up to 10.255.255.255
Class B	172.16.0.0	up to 172.31.255.255
Class C	192.168.0.0	up to 192,168,255,255

Step 1A - LAN installation procedure

Use a crossover LAN cable to connect the ECOLOG-NET datalogger to a PC.
A crossover LAN cable can be identified by the position of the colored wires. The position of the orange wire identifies a crossover LAN cable.
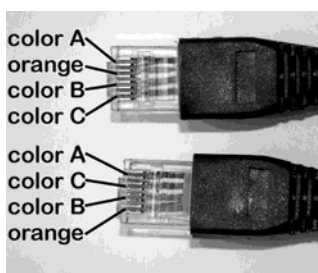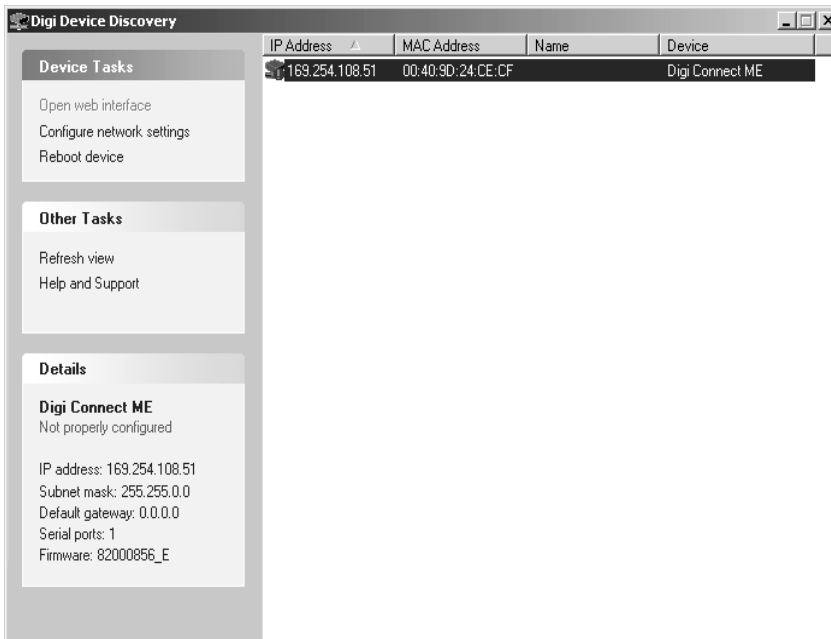
LEDs indicate the following states:

- The orange LED is lit continuously – a stable connection to the PC has been established.
- The green LED is blinking – there is data traffic.
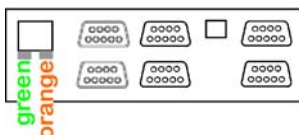
Start - Program - Elpro - Digi Device Discovery. 🖉

✔ Program a network address using program Digi Device Discovery.
The Digi Device Discovery program is on the elproLOG ANALYZE CD-ROM.

Message: "Not properly configured" indicates a network address conflict between the PC and the ECOLOG-NET. It is still possible to configure the IP address! If the datalogger is not visible, please switch off your FireWall (ask your IT for assistance).

✔ Configure the network settings
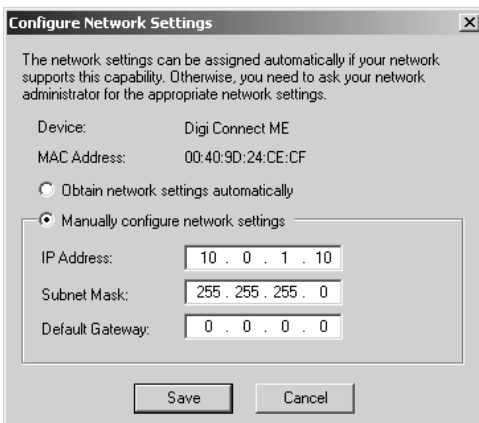
- Select: Manually configure network settings.
- Enter the datalogger IP Address, Subnet Mask and Default Gateway
- If the Default Gateway is not used, set it to 0.0.0.0.
- Confirm the above procedures with "Save". If you are asked for a password after activating "Save", close the window with "Cancel" and reboot the datalogger. A reboot can also be performed by unplugging and then replugging the mains power connector
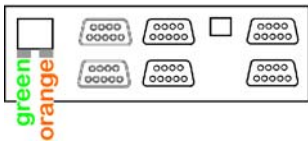- Activate "Reboot device" to reboot the ECOLOG-NET.

As standard value for the Subnet Mask, use: 255.255.255.0

Password inquiry

Step 1B - WLAN installation procedure

Requirements

For more details about these settings, contact your IT department or refer to the documentation for the used access point.
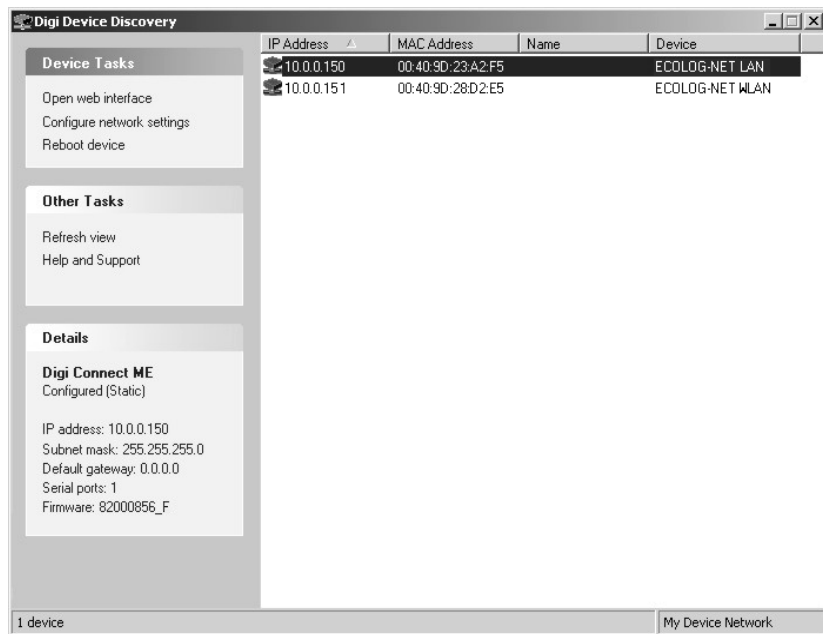

Start - Program - Elpro - Digi Device Discovery.

Message: "Not properly configured" indicates a network address conflict between the PC and the ECOLOG-NET. It is still possible to configure the IP address! If the datalogger is not visible, please switch off your FireWall (ask your IT for assistance).
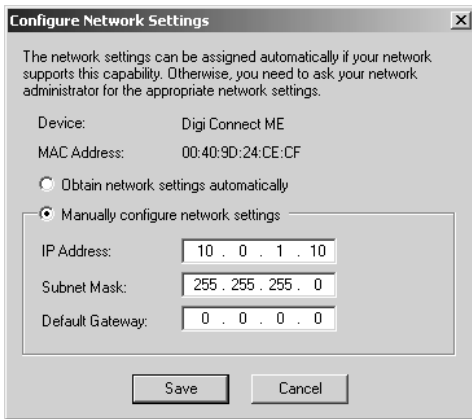
In order to set up an ECOLOG-NET W... logger, you require an access point. The access point must broadcast its SSID and the following security settings must be deactivated: WEP, WPA and MAC.

If you encounter problems when you deactivate security settings, we recommend you use a second isolated access point temporarily for setting up the dataloggers.

- ✔ Switch on the datalogger and observe the status of the LEDs
  - The orange LED is lit continuously – a stable connection to the access point has been established.
  - The green LED is blinking – there is data traffic.
- ✔ Program a network address using program Digi Device Discovery.
  The Digi Device Discovery program is on the elproLOG ANALYZE CD-ROM.

- ✔ Configure the network settings

- Select: Manually configure network settings.
- Enter the datalogger IP Address, Subnet Mask and Default Gateway
- If the Default Gateway is not used, set it to: 0.0.0.0.
- Confirm the above procedures with "Save".
  If you are asked for a password after activating "Save", close the window with "Cancel" and reboot the datalogger. A reboot can also be performed by unplugging and then replugging the mains power connector
- Activate "Reboot device" to reboot the ECOLOG-NET.
- ✔ Security
  After all the network settings have been made, define the security settings for the datalogger.

  For stable datalogger operation we recommend the use of a fixed SSID and country as well as defined channel number and connections to wireless access points.

  For information about logging into the WEB interface and correcting wrong settings, see: The service manual for dataloggers of the ECOLOG-NET family.

As standard value for the Subnet Mask, use: 255.255.255.0

Password inquiry

Security
WEB interface
incorrect settings

http://www.elpro.com - Download - Data Sheets - The service manual for dataloggers of the ECOLOG-NET family

⚠ **PLEASE PERFORM THIS TASK WITH UTMOST CARE. THE DATALOGGER WILL NO LONGER BE VISIBLE IN YOUR WLAN IF YOU MAKE AN INCORRECT SETTING!**
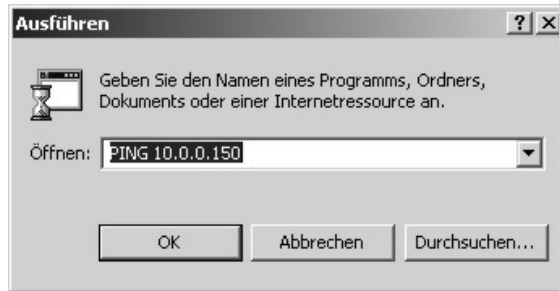
Step 2 - Communication test

PING

The above settings can be tested with the Windows PING command.

Execute: Start - Run and enter: ping and the IP address of the datalogger which requires testing.

Check the PC LAN configuration if the test fails. The PC should be in the same subnet as the datalogger.

Step 3 - Documentation

- Print out the logger status.
- Use the label on the logger housing to record the IP address.
- Complete the installation documentation for use during a subsequent qualification.

4.2   Datalogger installation - 6 steps

Step 1 - Installation

Install the dataloggers, sensors and power supply in accordance with your project documentation.

Step 2 - Communication test

Use the Windows PING command to test the settings.

(4.1 *Data logger configuration - 3 steps*, Step 2)

Step 3 - elproLOG CONFIG

Document SC3001

Create the group files used to define names and addresses for the dataloggers and sensors in the network.

Step 4 - elproLOG ANALYZE

Program the dataloggers.

Step 5 - elproLOG MONITOR

Document SM3002 & SM3402

Define the monitoring and alarm functions.

Step 6 - Check the installation

- ✔ To check the installation, fill out the installation report, print out all the datalogger status information and record the corresponding LAN configuration (IP Address, Subnet Mask, Default gateway) on the status hardcopy. Use the following blank document for this purpose: "EN6004D System Configuration ECOLOG-NET". This file is stored on your elproLOG ANALYZE software CD-ROM.

- ✔ Check all the sensor positions and alarm inputs. Use the calibration connectors to check for the correct datalogger settings.

Document EN6004

5. Initial settings

After the initial program, start a few basic settings must be checked and modified if necessary.

5.1 Language

Use button [F3] to change the language used for the elproLOG ANALYZE. The standard language is the language of the operating system.

5.2 Connection options

In pulldown menu "Options", select menu item "Com Port"; selection window "Communication Settings" opens.
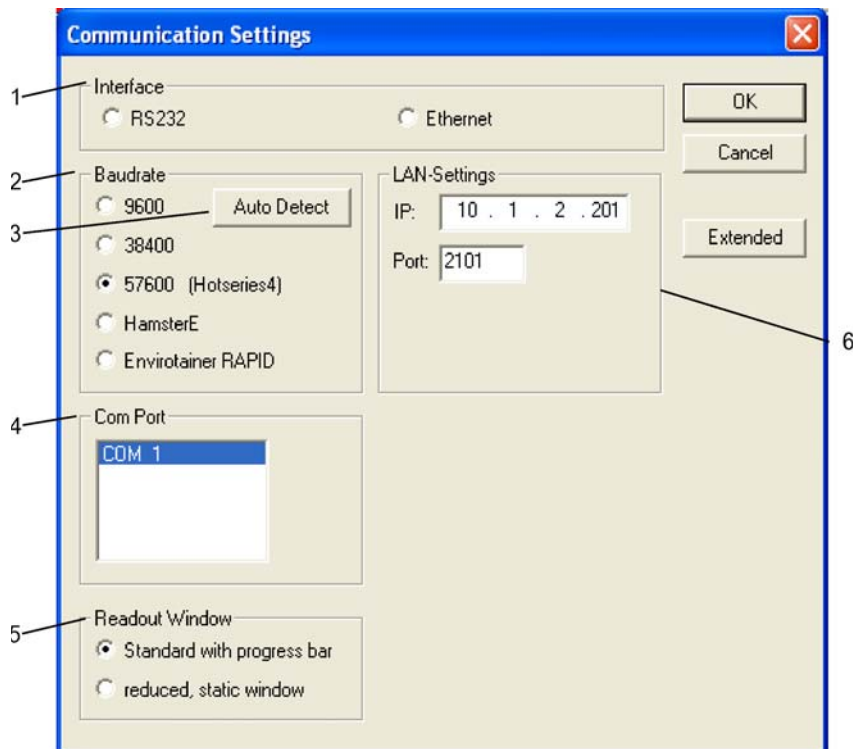
RS232 / Ethernet ✎

1. Interface
- RS232: is used for dataloggers with RS232 connection
- Ethernet: is used for dataloggers with LAN interface

9600 - Envirotainer RAPID ✎

2. Baudrate
- 9600: old datalobbers communicate automatically with 9600 baud only.
- 38400: standard speed

- 57600 (Hotseries4): is used by the HOTBOX SE; V1.03 and by dataloggers with LAN connection in cases where the local RS232 / USB port is implemented.
- HAMSTER-E: ia only used for the HAMSTER-E datalogger!
- Envirotainer RAPID: is used for the Envirotainer RAPID-IR

3. *Auto Detect*
When this button is activated, elproLOG ANALYZE determines the required baud rate for the connected datalogger automatically.

4. *Serial connection*
Selects the serial interface COM..., to which either the datalogger, the PC interface or the USB to the RS232 converter (part no. 2317-USB) is connected.

5. *Readout window*
The standard progress bar works well with the majority of computers. It is only necessary to work with reduced, static windows when computers are too slow or when computers have an extremely high workload. In the above cases, working with reduced static windows will prevent read errors during data transfers.
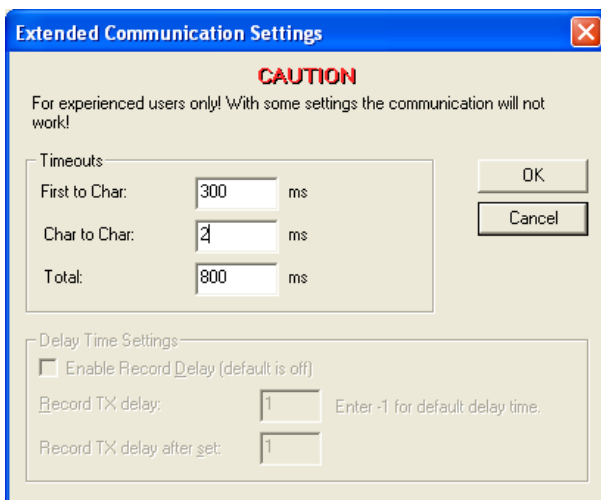
6. *LAN settings*
This is the current IP address and the used TCP/IP Port. Port 2101 is the software-defined default port and, as such, should not be changed!

Click "Extended" in window: "Communication Settings". The following window opens:

Auto Detect

Com Port

Progress bar window

Port 2101

Extended Communication Settings

> Do not modify these settings unless there are problems with the communication between the program and a datalogger.
>
> Always change all 3 parameters by the same factor.
>
> Increasing these parameters slows down communication with all the dataloggers in the network.

Timeouts

- First to Char: Timeout till communication is stopped when no response comes from a datalogger.
- Char to Char: Maximum timeout between 2 received characters
- Total: Maximum timeout for receipt of a data block

The software makes 3 attempts to establish communication. Consequently, an error message is not triggered until the defined timeout has elapsed three times.

Wait times
Timeouts

Timeout range:

First to Char   300ms - 3000ms

Char to Char: 2ms - 200ms

Total: 100ms - 5000ms

> The set timeouts should be as short as possible

Settings: Delay

This setting is only for internal testing!

5.2.1   USB port

Service work: The USB port on some of the datalogger types may also be used for service work such as battery replacement, local data evaluation and reprogramming. The appropriate USB driver must be installed to ensure proper communicating between datalogger and PC. If the driver is missing, you will find it on the elproLOG ANALYZE CD-ROM in directory: Drivers / USB for ECOLOG-NET. Check that the driver is functioning correctly by connecting and disconnecting the USB cable while observing the USB port display in the Windows device manager. The port should appear and disappear again depending on whether the datalogger is connected or not connected.

6. Datalogger evaluation

⚠️ **THE DATE AND TIME PROPERTIES FOR YOUR PC MUST BE ACCURATE.**

6.1 Date and time

The PC's time and date properties are always used as the time basis for dataloggers HOTDOG, HOTBOX, HAMSTER-A and ECOLOG TN2.
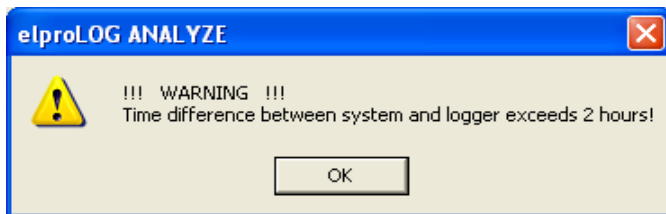
The following dataloggers have an internal clock: HOTBOX Euro, HOTBOX SE, HTH, HTN, ECOLOG TN3-P, TN4, TN4-L, TH1, TH2,
ECOLOG-NET, HAMSTER-E.

Do not forget summer time/winter time changeovers.

6.1.1 Warning

When data points are read out at the datalogger, the internal clock and the PC clock are compared. A warning message is triggered if the time deviation exceeds 2 hours.


6.1.2 Setting the PC clock

1. elproLOG ANALYZE stop.
2. Set the internal PC clock: "Start/Settings/Control Panel/ Date and Time".
3. elproLOG ANALYZE start.

6.2 Reading out data at the datalogger
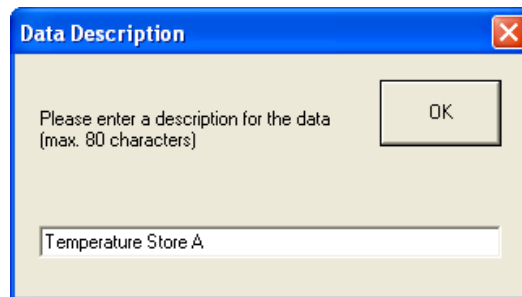
6.2.1 Standard mode

- In menu "File", select menu item "Readout Datalogger". The program now reads out the saved data at the connected datalogger (measured values and status). The progress of data transfer is shown in the following window:

In reduced display mode, a static display replaces the progress bar.

> Reading datalogger in progress...
>
> [Cancel]
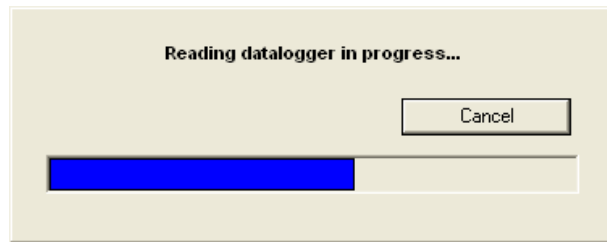
After data readout is finished, as an option, you can enter a text describing the data. This information text is saved along with the file as evaluation info.

This information text is not the file name.

Data Description

Please enter a description for the data (max. 80 characters)

[OK]

Temperature Store A

- The entered data are displayed as measured values corresponding to the axes calibration.

Read Status

- In menu "File", activate menu item "Read Status" to read and display the datalogger status. This command neither reads out the measured values nor makes them available.

6.2.2 "Data read with auto-save" mode

These special buttons replace the standard buttons if you select menu item "Data read with auto-save mode" in menu "File".

Reads and saves
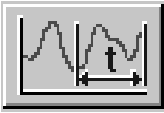Reads out the datalogger and saves the data to the target directory.

☞ 2.2.5 *Menu - Options*

Reads and saves a group
Reads out all the dataloggers in the selected group automatically and saves the data to the target directory.

Selects target directory
☞ 2.2.5 *Menu - Options*

Readout range
Defines the time range to be read out.

Closes mode

6.3   Displaying data

6.3.1   Graph

The min/max thresholds can be displayed and the functions available in menu "Edit" can be selected.

Use the right mouse button to decrease the time step (X axis).

A red cursor line can be dragged as required to select individual readings on a line chart. The corresponding data (date, time, measured value) appear below the diagram.

Using the cursor line

Keep the left mouse button pressed and move the mouse to drag the cursor line.

Move cursor line with mouse

You can also use the mouse pointer to mark the reading on the line chart and then press the left mouse button. The cursor line jumps to the point marked by the mouse.

Working with the mouse is fast but inaccurate. For precise results, we recommended working with the keyboard:

Move cursor line with keyboard

- Use arrow buttons [‹-] and [-›] to move the cursor line.
- Buttons [Pg Up] and [Pg Dn] can adjust the step size when moving the cursor line.
- Buttons [Home] and [End] move the cursor line to the left or right hand side of the line chart.
- Button [Delete] hides the cursor line and the measured values. Press the left mouse button to show the cursor line and the measured values again.

Color assignment:

The colors for the individual line charts can be autonomous (each line has its own color) or logger-specific.

Line color: Color of line chart: in pull-down menu "Options", select menu item "Colors/ Color assignment"
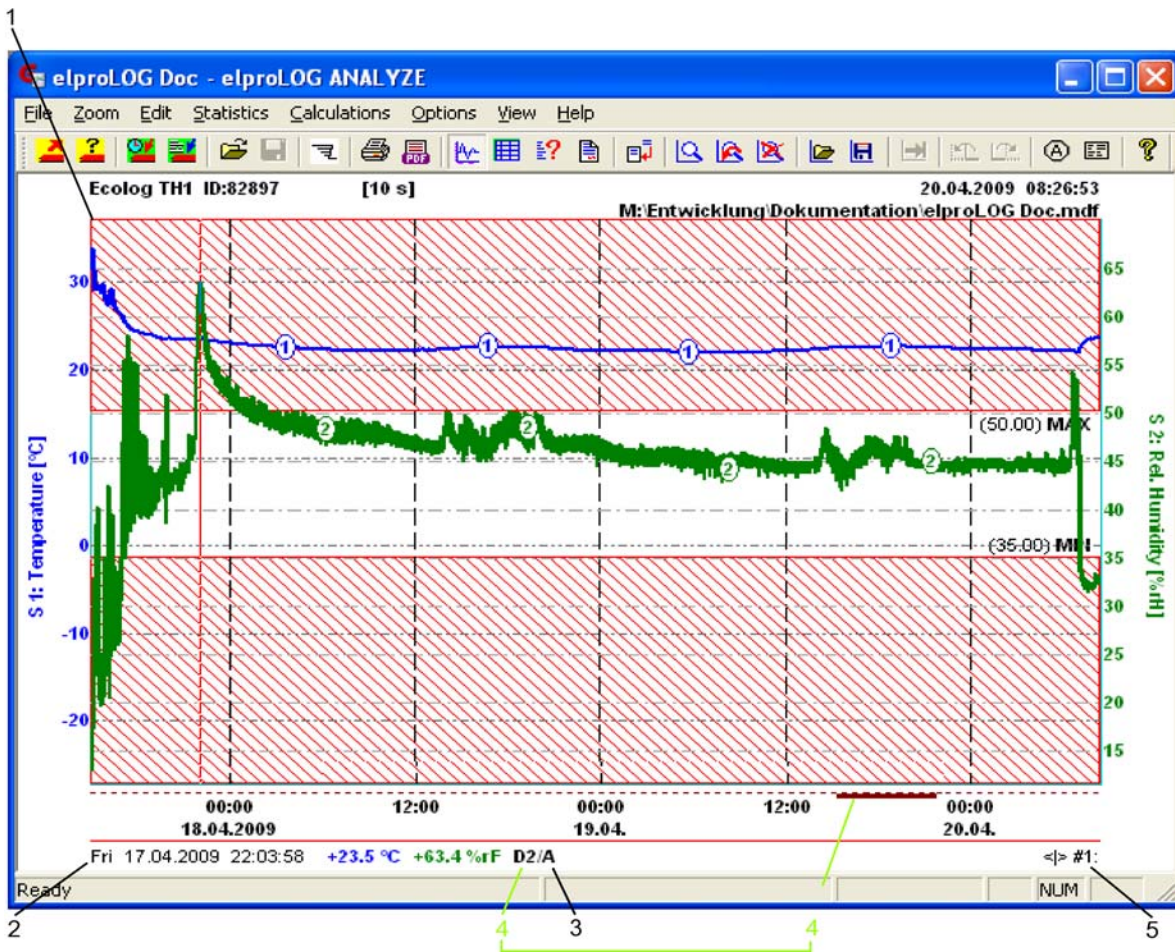
1. *Min/max hatching with label*
2. *Display of current draggable cursor values.*

Data error codes
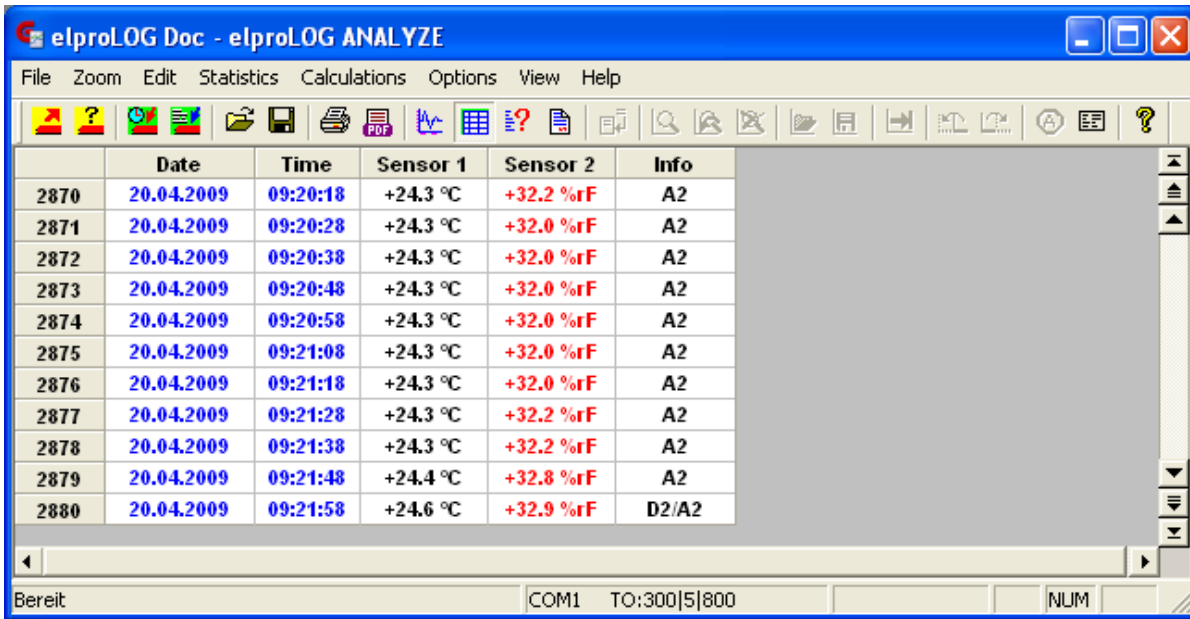
- UNDEF No measured value logged

- N.C. * not connected *
  No (functioning) sensor connected.

- S.C. * short circuit *
  A short circuit was measured.

- S.E. * sensor error *
  Measured value outside the defined measurement range

- <MIN The measured values do not correspond
- >MAX with the possible scaling (wrong or defective sensor).

- #+1234 "Show Digits" was selected under menu "View".

3. *Alarm, one of the preset limits has been violated.*
4. *The baseline contains the InPos marking for HOTDOG and HAMSTER-A as well as the D1/D2 markings for the ECOLOG and the ECOLOG-NET datalogger.*
5. *Step size when the cursor is moved (jumps between measured values, can be adjusted with buttons [PgUp] and [PgDn])*

6.3.2 Table

The measured values are displayed as a table. The table can be copied or exported. The table export format can be defined.

☞ 6.6 *Exporting data*

	Date	Time	Sensor 1	Sensor 2	Info
2870	20.04.2009	09:20:18	+24.3 °C	+32.2 %rF	A2
2871	20.04.2009	09:20:28	+24.3 °C	+32.0 %rF	A2
2872	20.04.2009	09:20:38	+24.3 °C	+32.0 %rF	A2
2873	20.04.2009	09:20:48	+24.3 °C	+32.0 %rF	A2
2874	20.04.2009	09:20:58	+24.3 °C	+32.0 %rF	A2
2875	20.04.2009	09:21:08	+24.3 °C	+32.0 %rF	A2
2876	20.04.2009	09:21:18	+24.3 °C	+32.0 %rF	A2
2877	20.04.2009	09:21:28	+24.3 °C	+32.2 %rF	A2
2878	20.04.2009	09:21:38	+24.3 °C	+32.2 %rF	A2
2879	20.04.2009	09:21:48	+24.4 °C	+32.8 %rF	A2
2880	20.04.2009	09:21:58	+24.6 °C	+32.9 %rF	D2/A2

ⓘ The color of the measured values signals threshold deviations. The info line shows the status of the digital inputs.

Table scrolling — Click the buttons in the scrollbar to scroll the measured values:

Jump to first value

Page-wise scrolling towards start of measurement log

Jumps through individual values towards first value

Jumps through individual values towards last value

Page-wise scrolling towards end of measurement log

Jump to last value

There are various methods to mark measured values in the table:

- Use the mouse pointer to click the index (table number in the left column) of the first value to be marked and keep the mouse button pressed. Drag the mouse pointer to the last value to be marked and then release the mouse button.
- Use the mouse pointer to click the index of the first value to be measured. Drag the mouse pointer to the last value to be marked. Press the [SHIFT] button and click this value with the mouse.
- Click the button in the top left corner of the table to mark the whole table.
- The whole graph area can be defined automatically as marked. The color of the measured values signals threshold deviations. The info line shows the status of the digital inputs.
- Pressing the [Ctrl] button together with the right mouse button allows you to mark several data blocks.

Table markings

Use this method to mark several pages of tables.

6.3.3 Status
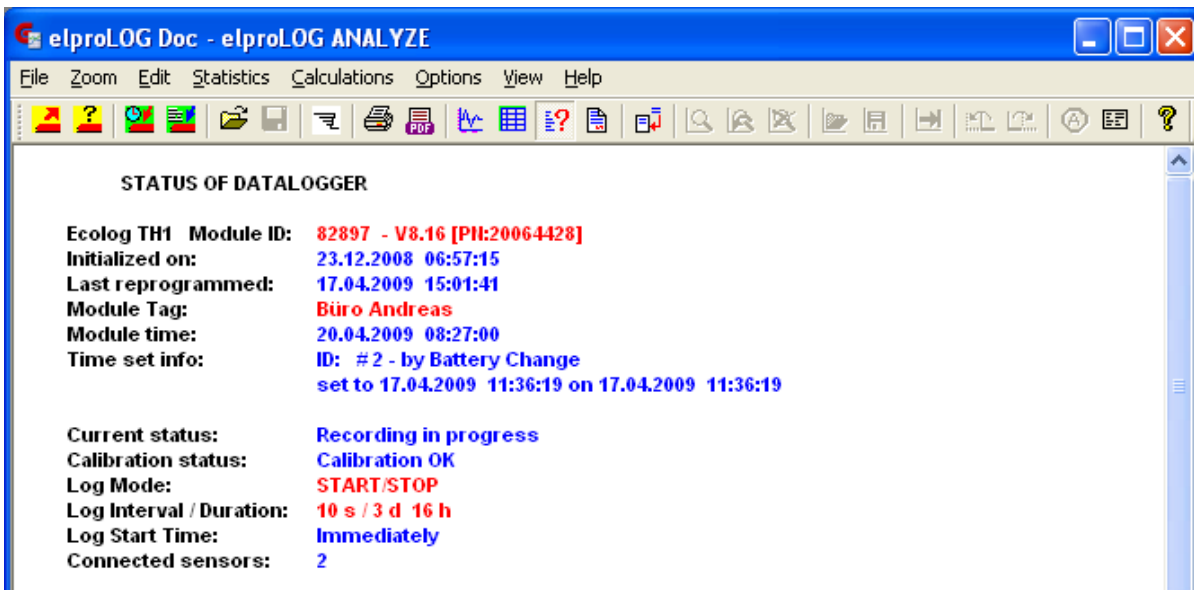

The current datalogger settings are displayed:

- Master data (serial number, module type and initialization information)
- Programmed settings such as measuring modes, alarm thresholds, etc.
- Programming information

- Current status (depending on datalogger type):
  - Waiting for logging to start (only START-STOP)
  - Logging in progress
  - Measuring finished
  - Calibration status, etc.
  - Battery status
  - Event protocol

6.3.4   Report

Existing entries can not be modified! 🖉

The additional information added by all the users with function: "Add Report Entry" is displayed.
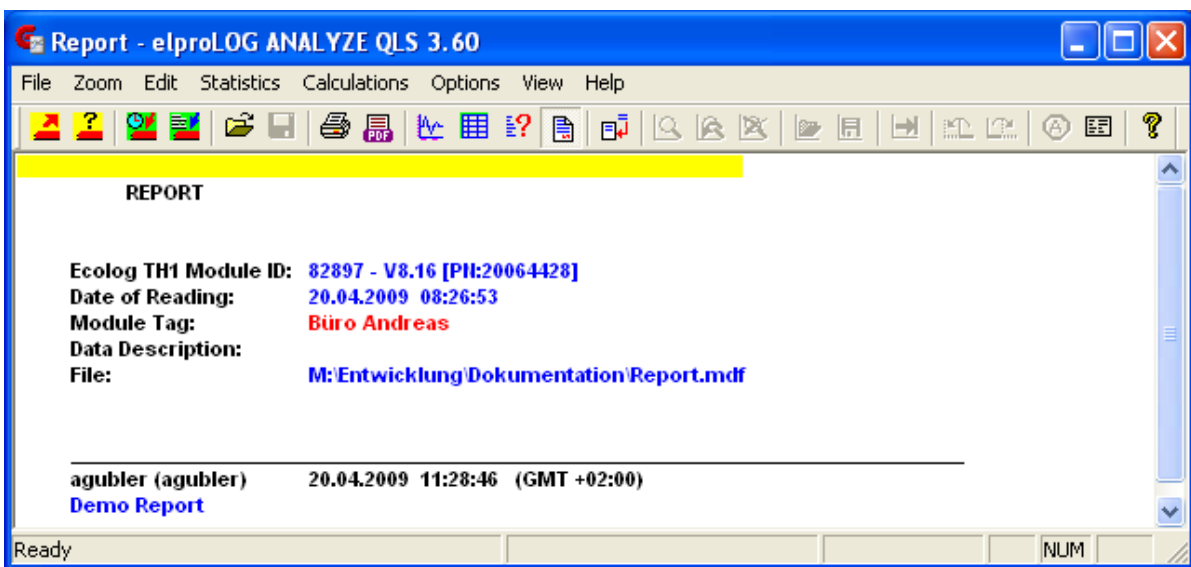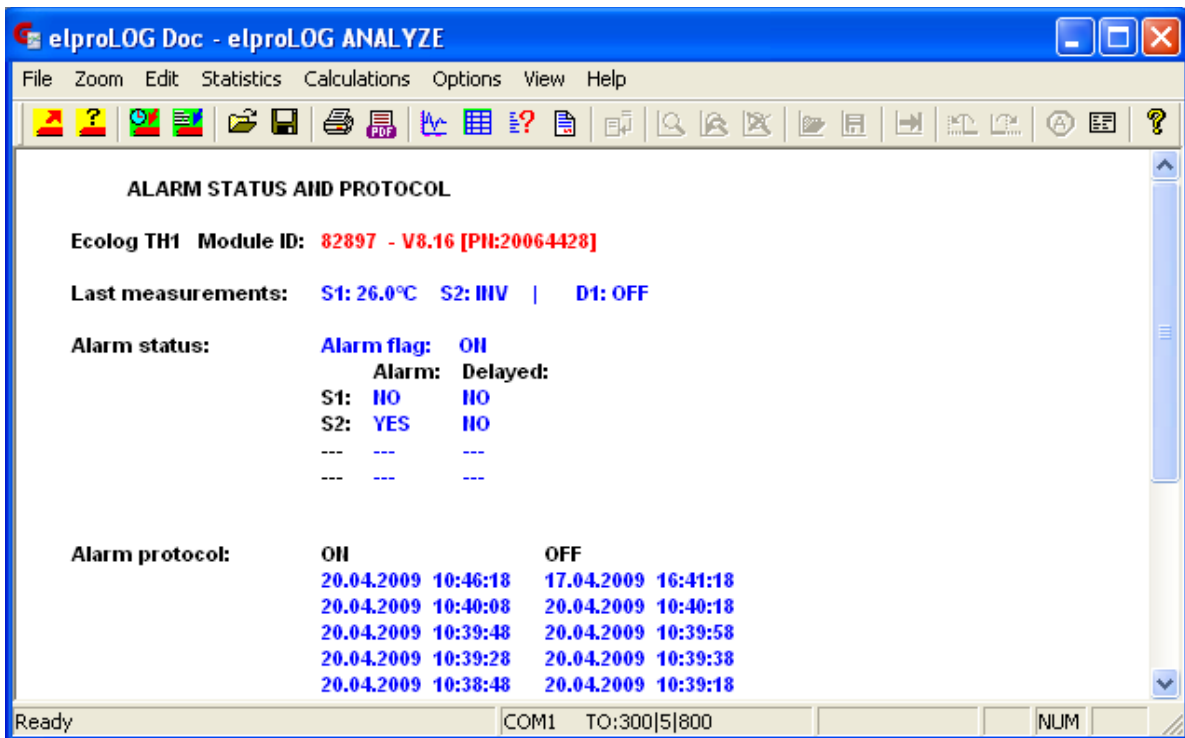

6.3.5   Alarm protocol

Except for ECOLOG TN2 for all: ECOLOG, ECOLOG-NET and HOTBOX SE 🖉

The most recently measured values, the duration of the threshold violations and the status of the alarm output (on, off, delayed) is shown. A maximum of 32 events are recorded.

Deactivate "Alarm On" to delete the alarm protocol. However, the alarm information is kept as part of the measured data. ☞ 7.2 *Extended Setup*

Alarm protocol: ON

Time when threshold was violated.

Alarm protocol: OFF

Time when measured value returned to tolerable range.

Alarm protocol: QUIT

Time when alarm was acknowledged manually.

Delayed: YES

Delayed: NO

The alarm contact does not trigger the alarm until after the delay time has elapsed. The entry in the alarm protocol corresponds with the current state at the alarm output. The entry is set to NO when the delay time has elapsed

☞ 7.3 *Defining the alarm parameters*

6.3.6   Overlay data

⚠️ **ONLY THE DATA READ FROM COMPARABLE DATALOGGERS WITH IDENTICAL MEASURING INTERVALS CAN BE OVERLAID. PAY ATTENTION TO THIS PREREQUISITE EVEN BEFORE SETTING UP THE DATALOGGER!**

Line charts from different dataloggers can be overlaid, displayed and thus compared directly.

- A master graph can be overlaid with up to 6 loggers.
- A maximum of 16 sensors can be shown.
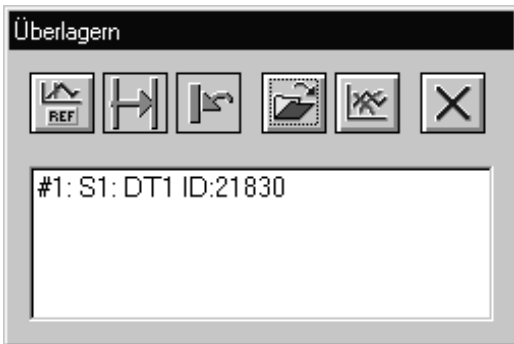
Use this window at any time to check which dataloggers were overlaid.

The window shows a list of the overlaid line charts and a legend for line chart numbering.

ⓘ The master line chart does not appear in this list. In this way, you always know which dataloggers have been overlaid.

Processing funtions for overlaid data

ⓘ The following operations can only be performed with marked logger data.
  👉 6.3.2 *Table* Table markings

- **Set a reference point**
Use the draggable cursor to mark a characteristic point on the master line chart. This point should be visible in the overlaid line charts and it should be possible to reset the point.

- **Shift a line chart to the reference point**
Set the draggable cursor on the characteristic point in the overlaid line chart (the reference point on the master line chart must be set). Click the button. A window opens. It shows the horizontal shift as time information. The overlaid line chart is shifted to the reference point after the [OK] button is activated.

This is a very practical function for comparing line charts. All the deviations can be seen at a glance.

- **Return to status prior to shift**
The overlaid line chart is shown in the state previous to shifting. All shifts are reversed.

- **Add a datalogger**
Click this button to call up window "Open Superposition File" and to add a datalogger.

A master graph can be overlaid with up to 6 loggers. A maximum of 16 line charts can be displayed.

Confirm your entries with the [OK] button.

- **Remove a datalogger**
This button calls up window "Remove Datalogger" which contains a list of all the overlaid dataloggers. First click the datalogger you want to delete and then click the [OK] button.
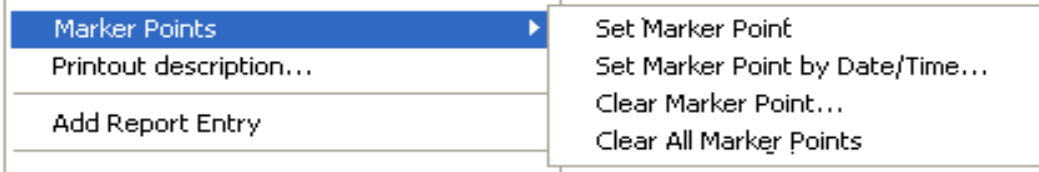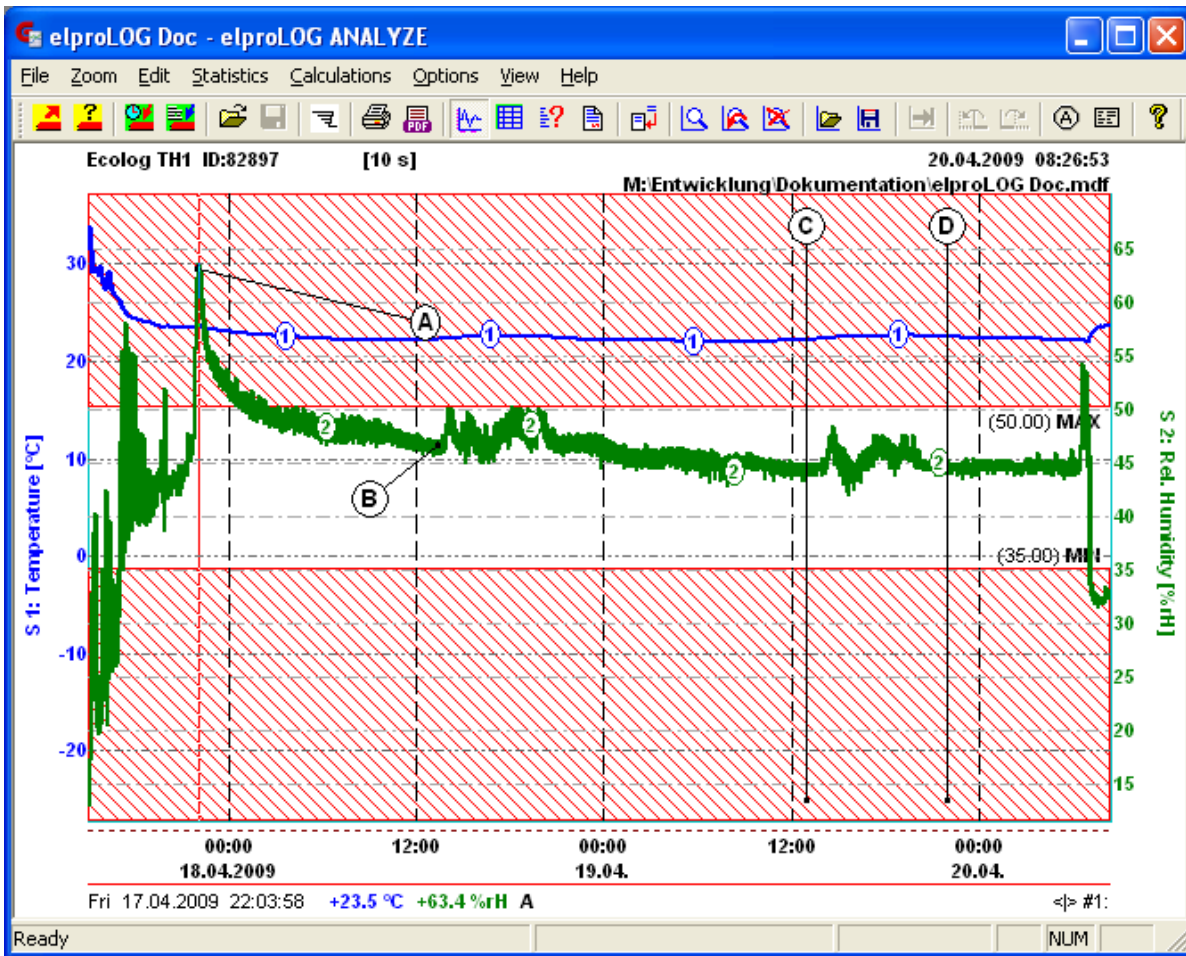
- **Close the application**
This button closes window "Overlays". The graph remains unchanged.

6.3.7 Marker points

Characteristic or significant values can be marked in the graph.

Marker Points	▶	Set Marker Point
Printout description...		Set Marker Point by Date/Time...
		Clear Marker Point...
Add Report Entry		Clear All Marker Points

• **Set Marker Point**

Use your mouse to set the crosshair at the required line chart point and then click the mouse button. Look at the cursor line to see whether you have hit a line chart.

Line chart hit	Measured value in the cursor line
Line chart not hit	Text on turquoise background: No sensor hit

Now move your mouse to the desired location and click to set the label on the graph. Marker points are labeled automatically and consecutively using capital letters (A, B) and the label is joined to the marker point by a line, see points A and B in the graph.

• **Set Marker Point by Date/Time...**

This submenu opens a window which allows you to enter the date and time for each marker point, see points C and D in the graph.

• **Clear Marker Point**

Opens a windows which contains all the set marker points. Mark the marker points which you want to delete by clicking them with the mouse and then click the [OK] button

• **Clear All Marker Points**

⚠	**THIS COMMAND DELETES ALL THE MARKER POINTS IMMEDIATELY WITHOUT A PROMPT FOR CONFIRMATION.**

• **Saving/loading marker points**

Use function "Save Zoom" and "Open Zoom" to save and load marker points

☞ 6.5 *Zoom*

• **Modifying marker point text**

The print information contains a legend for the marker points. Its contents can be modified or deleted.

☞ 6.4.3 *Printout Description*

6.3.8   Minima and maxima

Minima and maxima (upper and lower limit values) are defined separately for each Y axis. The limit values are shown in the line charts or tables. You can choose between two draw modes for limits values, i.e. hatched area or limit lines. The min/max values are used in calculations. They can also be used for class formation in the histogram.

• **Defining the min/max values**
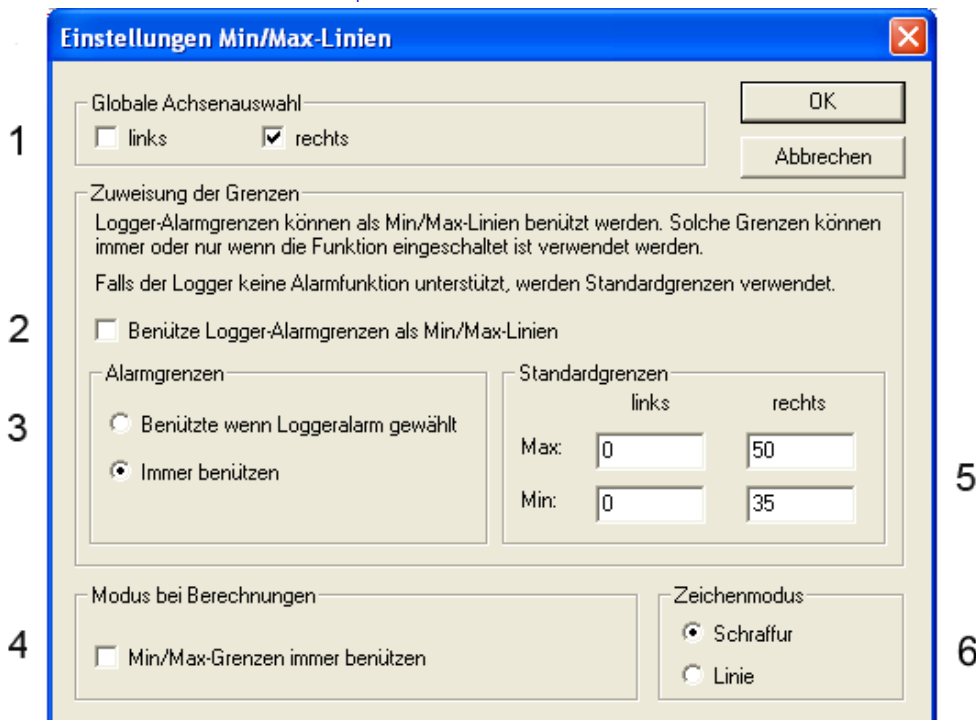
1. *Checkboxes "left" and "right" correspond with the Y axes in the graph.*
2. *If the logger supports alarm functions, the logger alarm limits can be used as min/max limits*
3. *If logger alarm functions are used, these limits have priority over the "standard limits".*
   ☞ *7.3 Defining the alarm parameters*
4. *When this checkbox is checked, the limit values will always be used in calculations. When this checkbox is unchecked, the limit values are only used when the min/ max lines are activated.*
5. *Enter fields for the min/max limit values for both Y axes.*
6. *Selects draw mode to display the limit values as hatched areas or lines.*

ⓘ The min/max values are only visible in the graph when "Display Min/Max" was selected in menu "View" .

elproLOG ANALYZE Operation Manual
SE3003E 12.2008

• Defining colors for min/max values

Current color setting

[left or right]

A mouse click on [left] or [right] opens the color selection window. Use this window to select standard colors or to define your own colors.

☞ 6.3.12 *Line colors*

Button [set to default] resets the colors to the standard settings.

[set to default]

6.3.9   Statistical data

Representation

1. *Statistical data*
2. *Y axis labeling in the graph screen*
3. *Line chart representation*
   All the features which are usually available in a graph (e.g. cursor dragging) are also available here.
4. *The min/max values must be activated for calculation ("on") if they are to be used.* ☞ *6.3.8 Minima and maxima*
5. *To leave the above statistical data screen and return to the normal graph screen: use your mouse and click menu item "Statistical data" in menu "Statistics" (the marker disappears).*

• Mean Value, Mean Variance and Std. Deviation
Correspond with standard statistical calculation features.

• Lowest / Highest Value
The minimum/maximum value measured in the corresponding time range is determined.

• Times minimum / maximum depending
The time during which a limit value was violated is calculated as sum of the individual times. Only the total time is calculated. The total time must not necessarily be made up of consecutive time periods.

• Range
A "from … to" range is displayed, showing the measured values which were used for the above calculations.

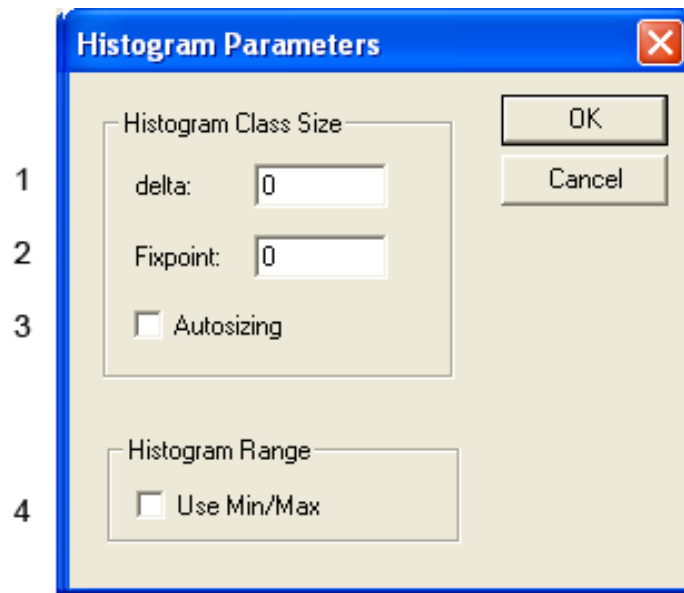### 6.3.10   Histogram

• Histogram representation
The histogram is calculated from the readings currently displayed in the diagram and in accordance with the histogram parameters. The bars are labeled with the number of values in their class and the corresponding percentage.
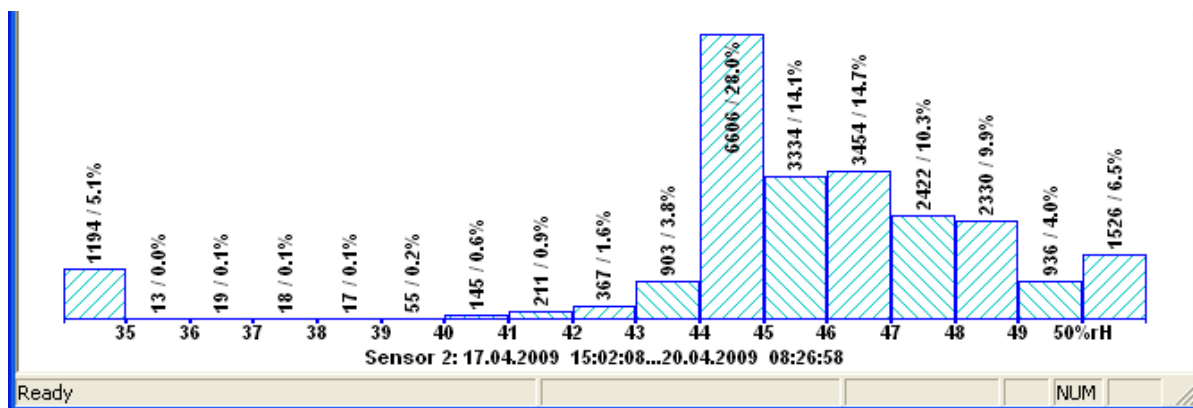
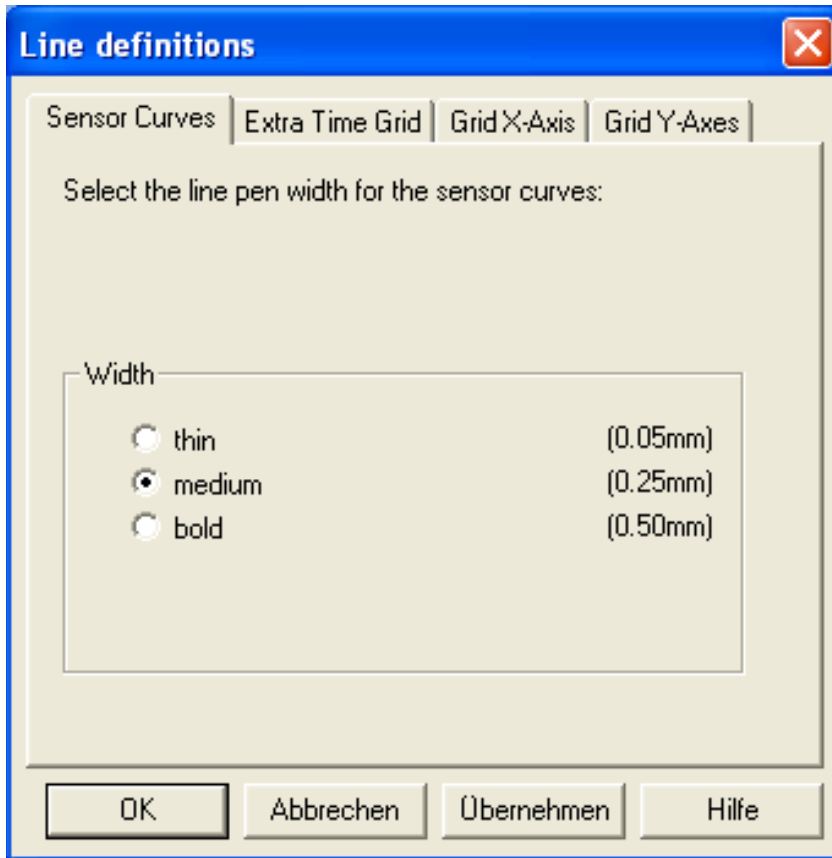- **Setting the parameters for sizing classes**

1. *delta*
   The delta value defines the class width.
2. *Fixpoint*
   The fixpoint defines the value from which the classes with defined class width will be calculated.
3. *Autosizing*
   The program generates the class size automatically when this checkbox is checked.
4. *Use Min/Max*
   The class limits are set in accordance with the predefined min/max values

   ☞ 6.3.8 *Minima and maxima*

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6.3.11 Line definitions

Use this window to make various settings for the sensor curves, the time grid and the diagram axes in the graph.

*This window opens when you select menu item "Lines" in menu "Options".*

Line definitions

Sensor Curves | Extra Time Grid | Grid X-Axis | Grid Y-Axes

Select the line pen width for the sensor curves:

Width

- ○ thin (0.05mm)
- ⦿ medium (0.25mm)
- ○ bold (0.50mm)

OK | Abbrechen | Übernehmen | Hilfe

ⓘ After making your selection, activate button [Apply] before you activate button [OK].

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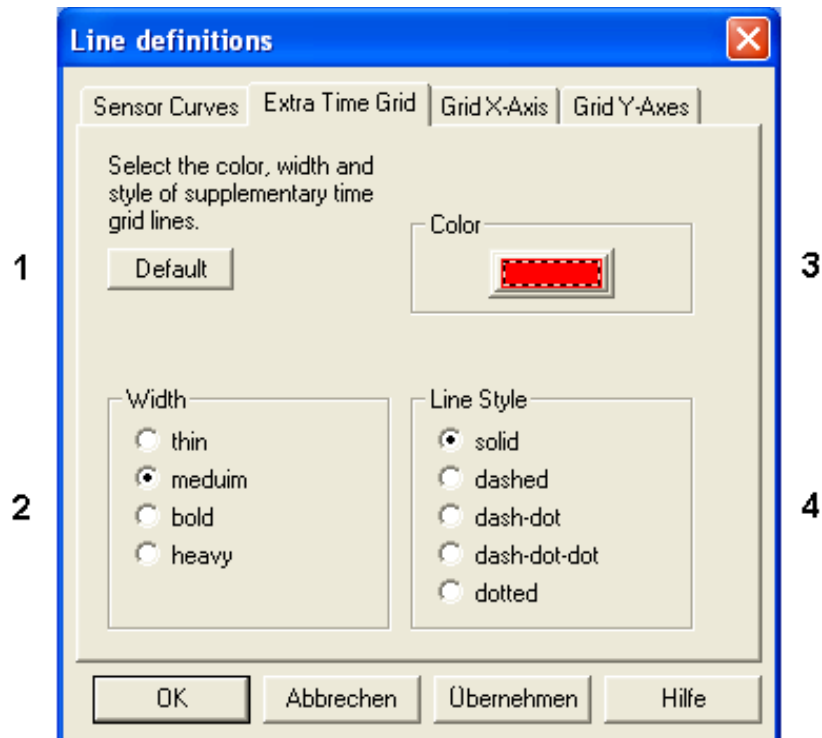
EN - 53

Extra Time Grid

1. *set to default*
   Returns the settings to the following default values:
   - Width
   - medium
   - Color - black
   - Style - solid

2. *Width*
   Selects the line width for the time grid.

3. *Color*
   Click [Color] to open the color selection window. Use this window to select standard colors or to define your own colors. ☞ 6.3.12 *Line colors*

4. *Style*
   Selects the color for the time grid.

Grid X-axis
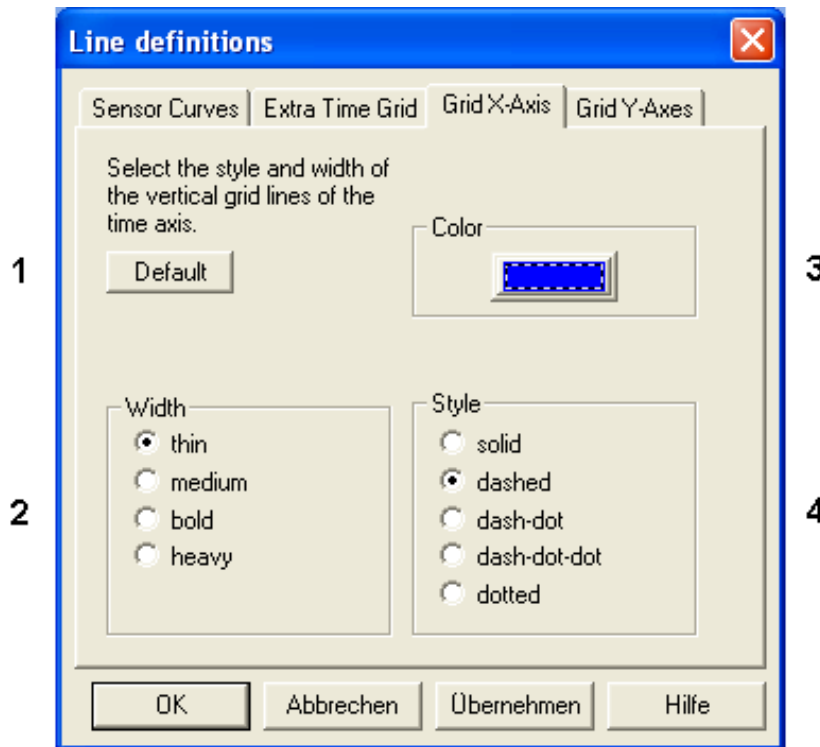
1. *set to default*
    Returns the settings to the following default values:
    - Width
    - medium
    - Color - black
    - Style - solid
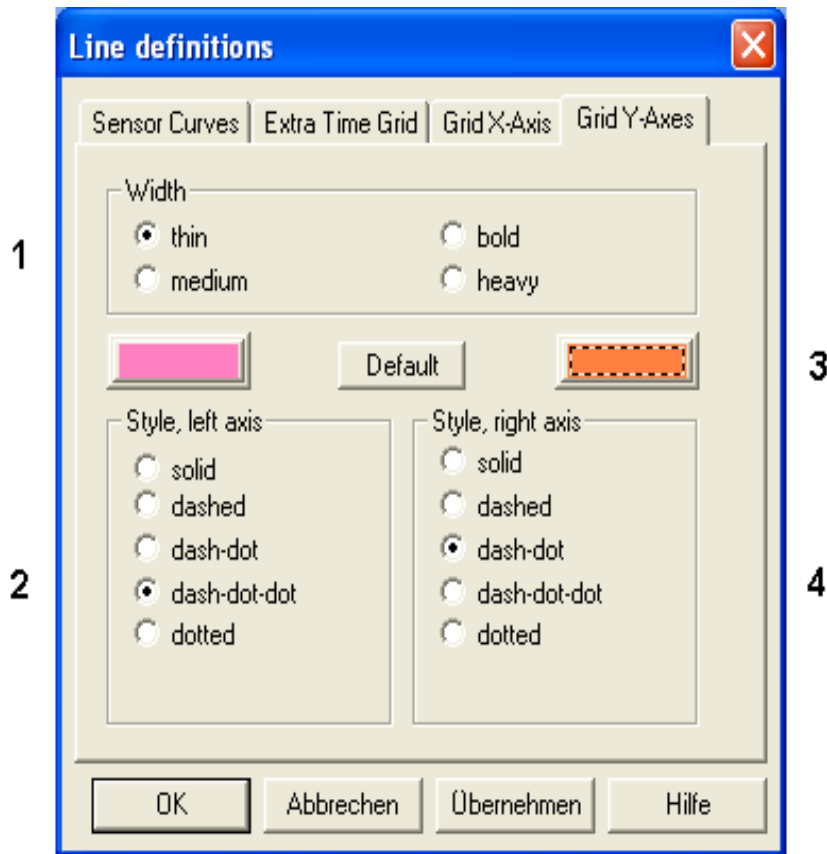2. *Width*
    Selects the line width for the grid.
3. *Color*
    Click [Color] to open the color selection window. Use this window to select standard colors or to define your own colors. ☞ 6.3.12 *Line colors*
4. *Style*
    Selects the color for the grid.

Grid Y-axis

1. *Width*
   Selects the line width for both grids.

2. *set to default*
   Returns the settings to the following default values:

Setting	Left Y axis	Right Y axis
Width	thin	thin
Color	gray	light gray
Style	dash-dot-dot	dash-dot

3. *Color*
   Click [Color] to open the color selection window. Use this window to select standard colors or to define your own colors. 👉 6.3.12 *Line colors*

4. *Style*
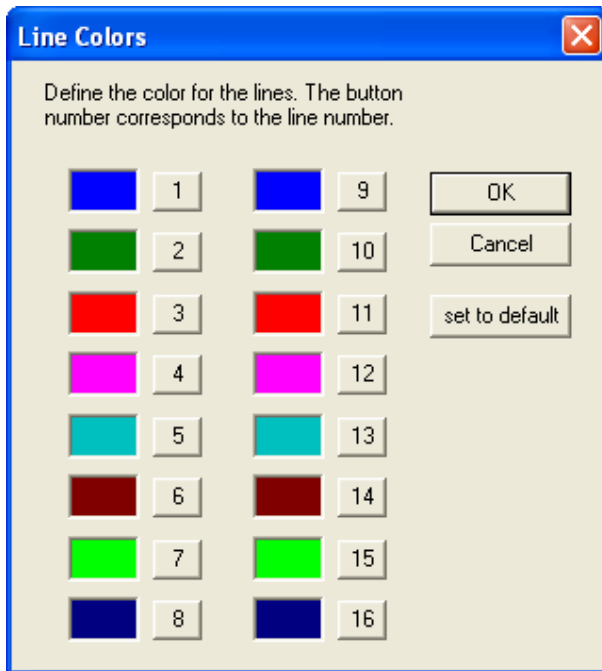   Selects the styles for the left and right Y axis grids.

6.3.12 Line colors

This window opens when you select menu item "Colors/Min/Max Colors" in menu "Options".

A mouse click on the line chart number opens the color selection window. Use this window to select standard colors or to define your own colors.

Basic colors

Button [set to default] resets all the color settings made in the color selection window to the default settings.

Color selection window

Basic colors

A maxium of 16 customized colors can bedefinedandsaved.

Select colors with a simple mouse click.

1. *Basic colors*
   The colors in the "Basic colors" area are standard colors

2. *Fields for customized colors*
   Button [Define Custom Colors >>] opens a window which allows the user to make user-defined color settings. Each newly defined color appears in area "Custom colors".

   Select a box under "Custom colors". Now click [Define Custom Colors>>].

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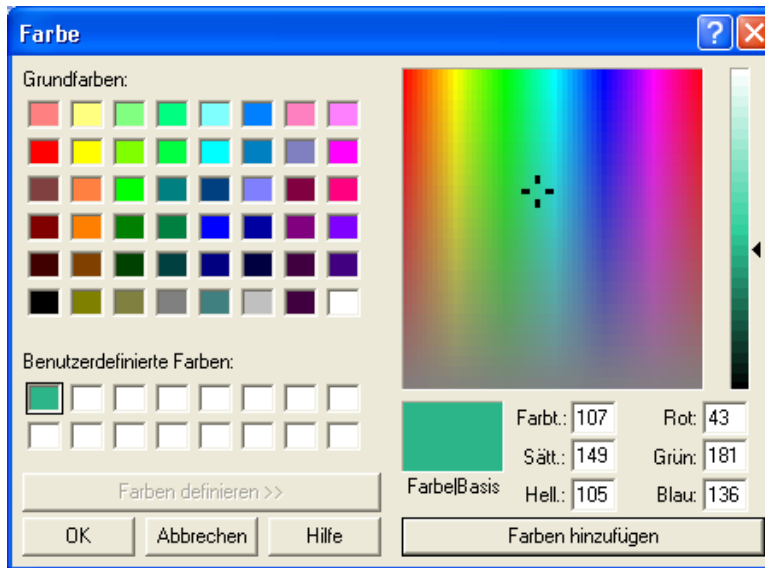
Custom colors

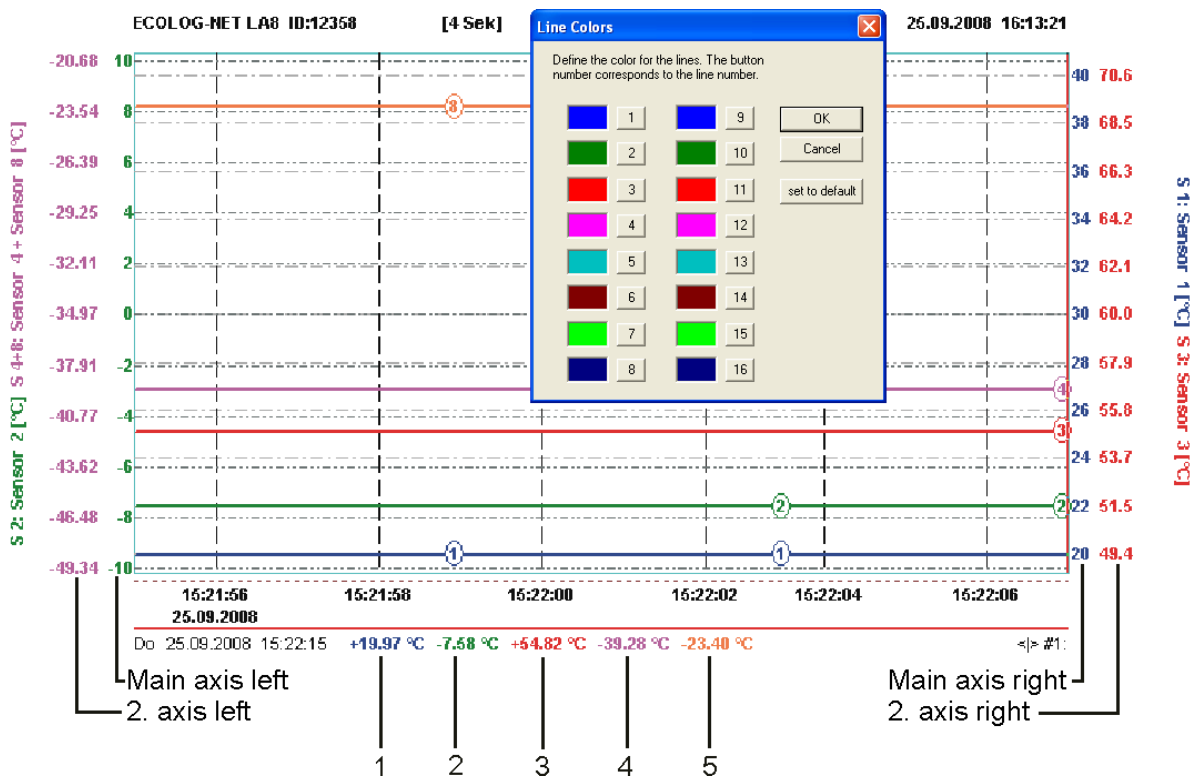Define the color in the RGB color model (red, green, blue), in the HLS color model (hue, saturation, luminance) or use the cursor to set color and contrast. Click [Add to Custom Colors] to add your own color.

Then click [OK].

6.3.13 Example: Line colors with ECOLOG-NET ...A8

1...5: Sensor no 1 till no 5

The colors of line charts correspond with the colors set in window: Line Colors

Assignment of axes

Main axis left	Sensor 2
2. 2nd axis left	Sensor 4 + Sensor 8
Main axis right	Sensor 1
2. 2nd axis right	Sensor 3

Representation

- One sensor per axis:
  The color of the line is not dependent on the axis assignment and always corresponds with the sensor number.
- Several sensors per axis:
  The color of the line is not dependent on the axis assignment. However, it always corresponds with the lower sensor number. In the above example, the color of both lines (line 4, pink and line 8, orange) corresponds to line 4, pink ☞ 6.3.12 *Line colors*

6.4 Printing

6.4.1 Print Setup

The used graph settings correspond with the saved zoom
☞ *6.5 Zoom*

You can select the following information:
- Graph with the required print infos and graphic settings
- Status
- Alarm protocol
- Table
- Report
- Audit Trail (elproLOG ANALYZE QLS only)

With the exception of the table, all the print outs are tagged with user name, date and information type. The above information is printed in a multipage document. The graph is printed out showing the current screen and using the selected zoom settings.
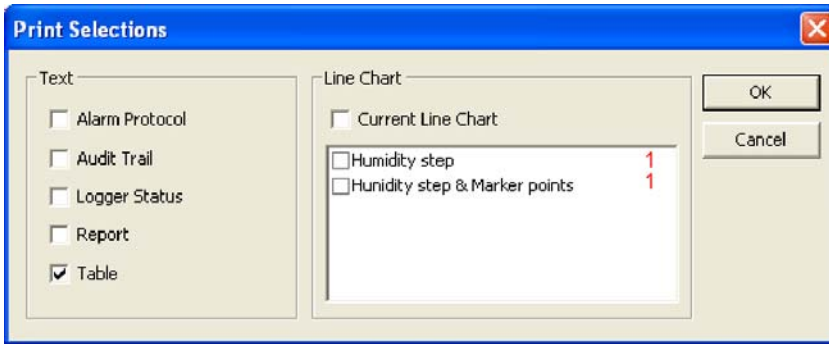
1. Saved zoom setting

6.4.2 Print Modes

1. Page mode, Use half page

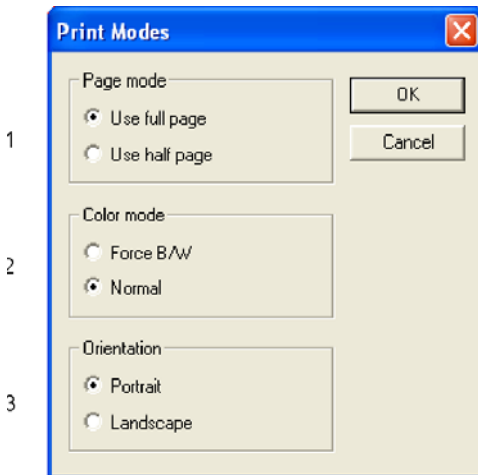   Advantages: Higher printing speed and more space for additional, personal information/notes.

2. Color mode, Force B/W

    The graph is printed black and white; there is no gray scaling. When a table is printed in B/W mode, all the values measured below and above the set limit values are marked with an asterisk.

3. Paper format for print out

6.4.3 Printout Description

Templates are saved in the program directory in file: ELOGWIN.TPL and can be copied to other PCs.

In menu "File", select menu item "Printout description" to open the following window:
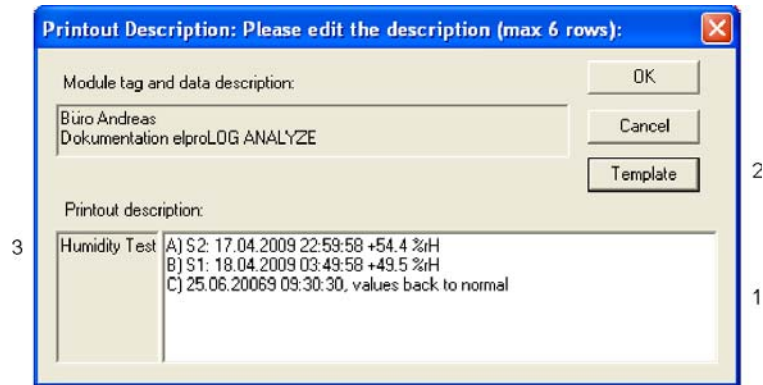
1. *This text field allows you to enter information text of up to 6 lines. This text will be printed out together with the graph or table.*
   The information text describes the graph or can be used as legend for the marker points. When you do not require any information text, delete all the entries in the text field and then click button [OK].

> ⓘ The legend for the marker points is created automatically, can however be changed or deleted manually as required.

2. *Information from the print out template. e.g. Description of measurement*

```
Ecolog TH1  ID:1   ID-S2:200410319   -   elproLOG ANALYZE
Date of Reading: 25.06.2008  10:51:21
Log Interval:      1 s
Module Tag:        Dokumentation
Data Description:Dokumentation elproLOG ANALYZE
M:\Entwicklung\Dokumentation\Anleitungen\SE elproLOG ANALYZE\Manuals\Dokumentation.mdf

Humidity Test    A) S2: 25.06.2008  09:24:07  +80.7 %rF
                 B) S1: 25.06.2008  09:24:48  +29.4 °C
                 C) 25.06.2008  09:30:30, values back to normal
```
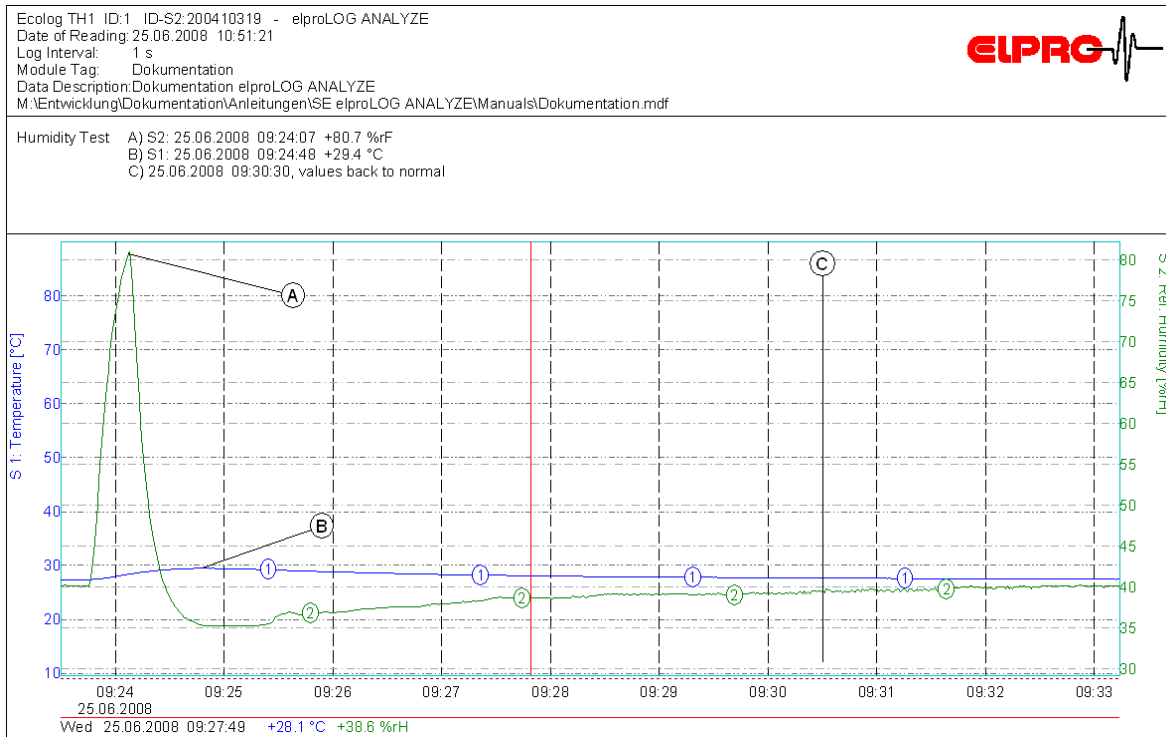
Example: Graph with print out description; for printout description text see window above

3. *This button opens another submenu. The submenu can be used to create and save frequently used information texts. The following functions can be selected:*

- New template: Defines a new template.
- Load template: Loads an existing template to the text field in the Printout Description window.
- Edit template: Allows you to edit the selected template.
- Remove template: Deletes the template from the text field in the Printout Description window.
- Delete template: Deletes the selected template from the directory.
- Rename template: Allows you to change the name of the template.
- Standard template: Defines a standard template.

6.4.4   Print preview

> ⚠ **WITH THE EXCEPTION OF TABLES, ALL THE SELECTED SCREEN REPRESENTATIONS CAN BE VIEWED IN THEIR PRINT FORMAT.**

The print preview feature makes it unnecessary to make test printouts. You will see the page exactly as it will be printed. In menu "File", select menu item "Print Preview". The page appearance corresponds with the selected settings.
However, the appearance of the menu bar does not change.

Example
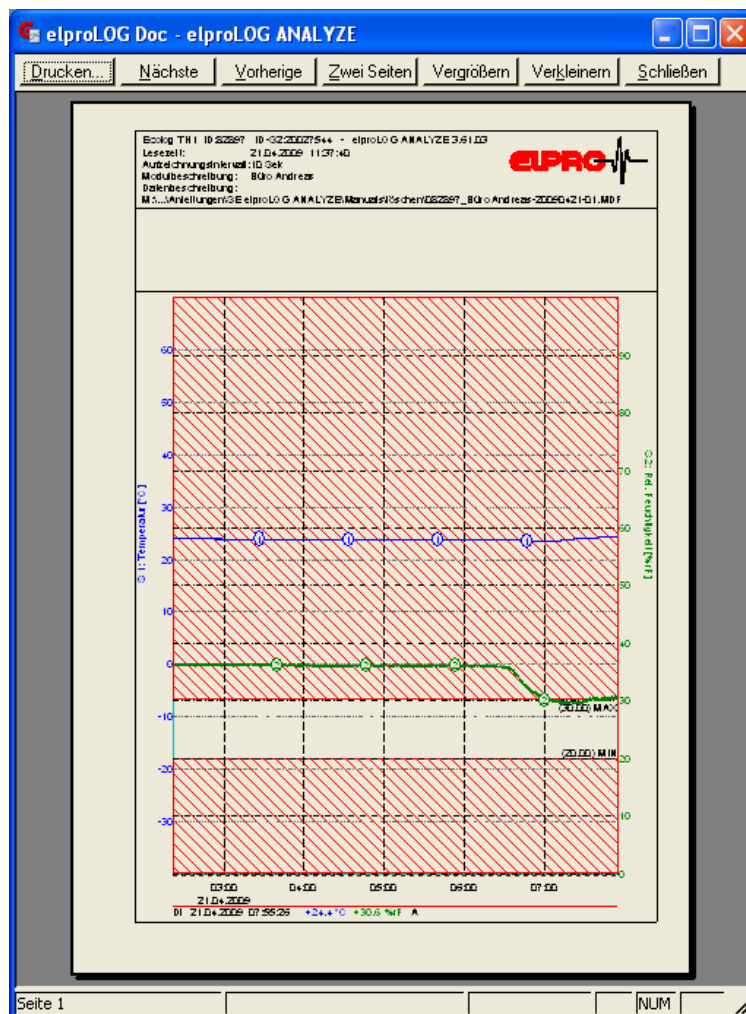
Printing   Printing is started. Window "Printout Description" opens. You can edit the text again if required. Press [OK] to print out the graph.

If there is more than one page, the next/previous page will be shown.

Next / Previous

Two pages are shown simultaneously on the screen.

two pages

The top area can be enlarged/reduced by a factor of 2.

Enlarge / Reduce

Closes the Page preview screen. The normal screen reappears. ☞ 6.4.5 *Company logo*

[Close]

6.4.5 Company logo

If required, you can attach your own company logo to the hardcopy.

This window opens when you select menu item "Print parameters / Logo File" in menu "Options".
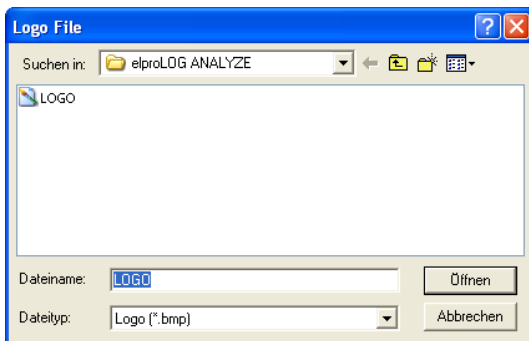
A colored or black-and-white graphic can be used as company logo. The logo must be saved as *.BMP file

Use a height of 100 to 200 pixels and 16 colors (4 bits per pixel) for the bitmap. elproLOG ANALYZE adjusts the height of the logo to the available space and scales the width using the same scaling factor.

The width should be approx. 250 to 400 pixels for a height of 100 pixels.

6.5   Zoom

6.5.1   Save Zoom

Saves the current settings (zoom, axes, marker points, calculations, print information, etc.) before the program is exited.
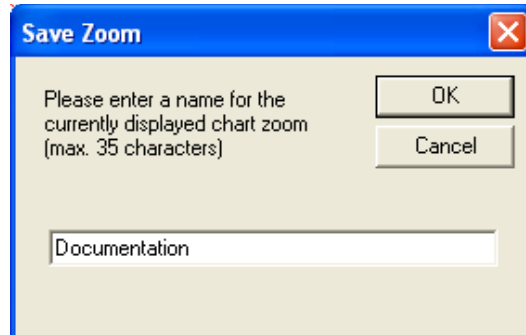
Use the text field to label the zoom information. The label can be made up of several words.

The saved zoom can contain the following information:

- Zoom settings and axis selection
- Marker points
- Calculations
- Printout description

Do not confuse the configuration name with the file name!

It is possible to save several zooms consecutively.

The zooms are saved to the same file as the measured values.

6.5.2   Open Zoom

Zooms which were already saved with the current line chart can be loaded with this menu point.
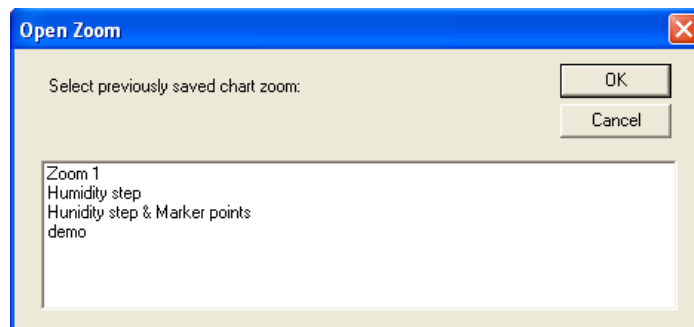
List of all available zooms. Use the mouse to click the required setting in the displayed list and then click [OK] to invoke it.

6.5.3 Remove Zoom
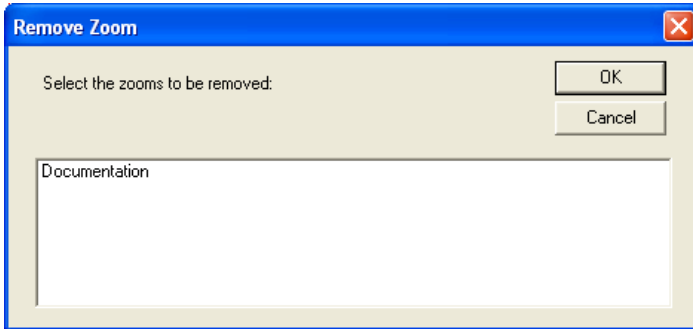
List of all available zooms. Use the mouse to click the required setting in the displayed list and then click [OK] to invoke it.

> ⚠ **BY VIRTUE OF THE REQUIREMENTS OF DIRECTIVE FDA 21 CFR PART 11, THIS FUNCTION IS NOT AVAILABLE IN ELPROLOG ANALYZE QLS.**

6.6 Exporting data

1. Define the format for the data export.
2. In menu "File", select menu item "Export" and enter the file name. The data are saved in the selected format as ASCII text file (*.TXT).

Data export procedure

> ⓘ Depending on the format and the selected area, very large files may be created!

It is possible to specify the required formats and settings for data export (menu "Options" - "Export Format").

Export Format
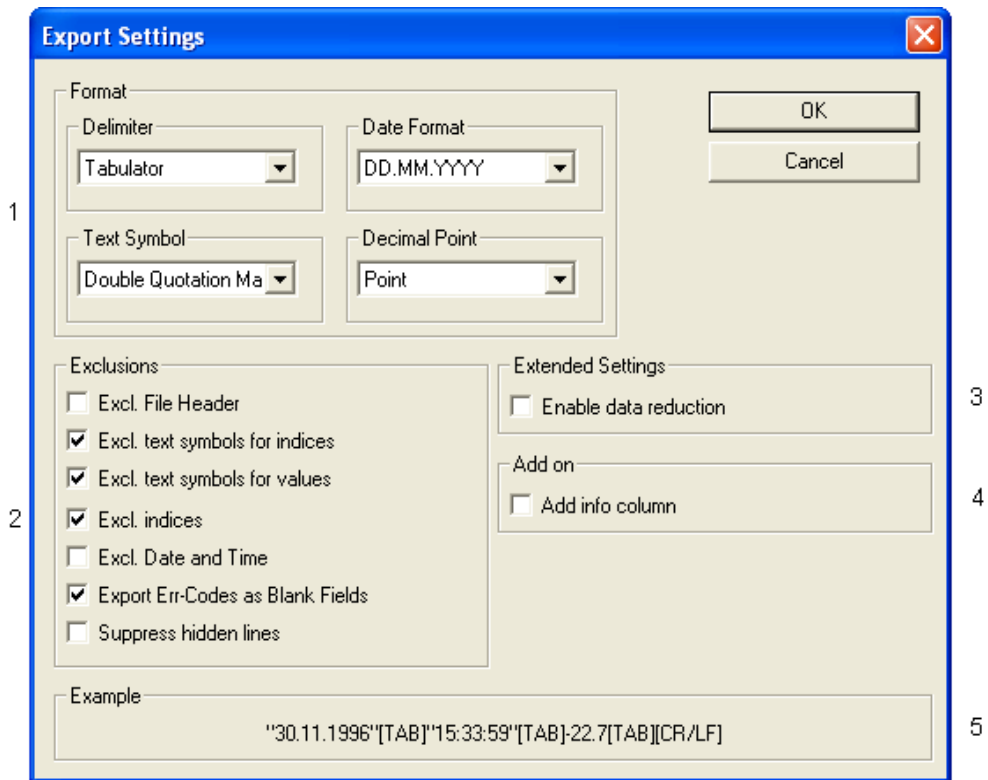
1. *Format*
   These presettings for formatting measured values are common to Microsoft EXCEL.

2. *Exclusions*
   The following settings suppress certain information during export.

   - Excl. File Header: The file header is not exported.
   - Excl. text symbols for indices: All measured values are numbered consecutively. Together with a text symbol, this makes up the index. In this case, the index is exported as plain number.
   - Excl. text symbols for values: The measured values are exported as plain numbers. This is very practical for calculations.
   - Excl. indices: The numbering for the measured values is not exported.
   - Excl. Date and Time: In addition to its index, each measured value is provided with the date and time of measuring. However, this information is not exported.
   - Export Err-Codes as Blank Fields: Error codes (e.g. NODATA, > MAX, NC, etc.) are exported as tabulators without text context. An empty column

appears. This simplifies calculation of the measured values.

- Suppress hidden lines: Only the line charts shown on the screen in the graph window are exported. This setting only takes effect in single graph mode for modules with several sensors.

3. *Extended Settings*

Checking this checkbox opens an additional window during export. This window offers various possibilities for data reduction (time interval, only export of min., max. or mean values).

4. *Add on*

The column with information about I-Pos, alarms, digital inputs, etc. is exported.

5. *Example*

The selected configuration is shown as example.

Reducing data volume for export

Enable data reduction at "Extended Settings" (see point 3 in screen legend)

When there is a large volume of data, it is possible to reduce the data volume or to limit the time range of the data to be exported.

If the checkbox for data reduction at "Extended Settings" is activated, prior to the data export, you are requested to specify the reduction parameters.

You can limit the time range by zooming the interesting area in the graphic representation or by marking the corresponding values in the table representation.

7. Programming the datalogger

Datalogger types HOTDOG and HAMSTER-A require interface (Part no. 2302) to connect with the PC ✎

This chapter describes the procedure for programming a datalogger. It is assumed that the datalogger is already connected to the PC.

ⓘ A corresponding error message is triggered if the connection to the PC does not work. Chapter 8. *Error messages* contains a description of the possible errors and how to correct them.

7.1 Datalogger Setup

Prior to using the datalogger, the measuring mode, logging start, logging interval, etc. can be programmed. In menu "File", select menu item "Datalogger Setup".
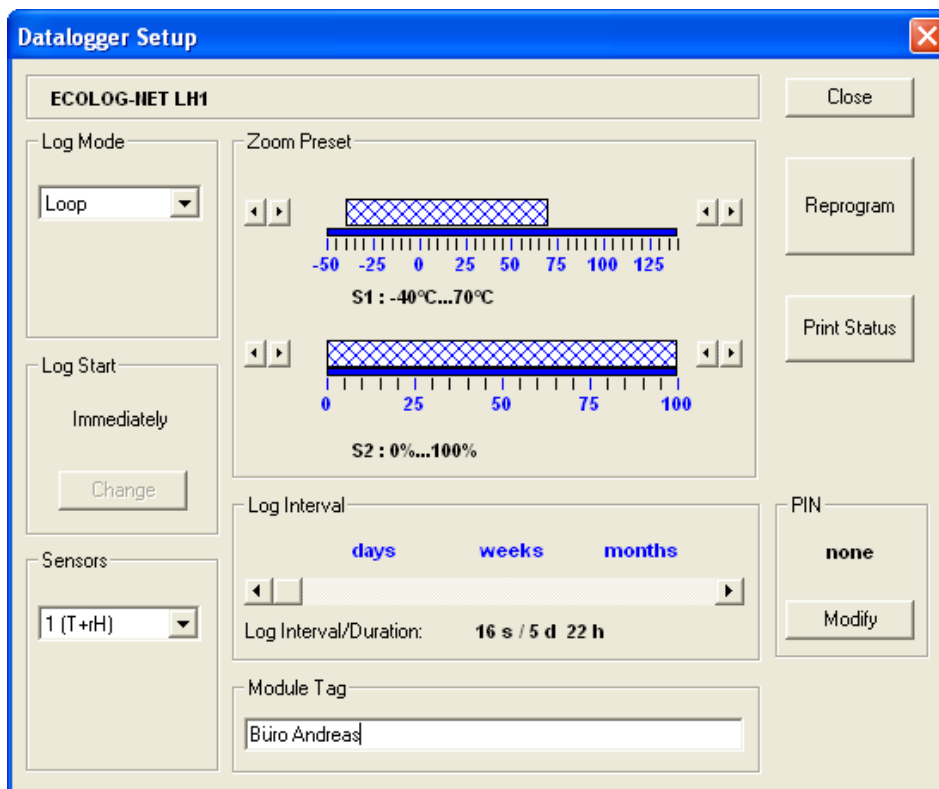
⚠ **ATTENTION - LOSS OF DATA**
PRIOR TO PROGRAMMING, AS A PRECAUTION, PRINT OUT THE DATALOGGER STATUS [PRINT STATUS] ! THE OLD SETTINGS AND MEASURED VALUES WILL NO LONGER BE AVAILABLE AFTER PROGRAMMING!

7.1.1 Logger type
ECOLOG-NET LH1

The datalogger type is detected and displayed automatically.

7.1.2 Log Mode

The measuring mode can be set to Start/Stop (measurement interval) or Endless.

This mode determines the start time for data logging. The end of the recording is predetermined by the log interval ☞ 7.1.6 *Log Interval.*
Start/Stop

Logging is run continuously. First, the data memory of the module is filled. Once this memory is full, each further measurement overwrites the oldest measured value. The overwritten value is lost irretrievably . The set log duration determines the period of time during which no measured values will be overwritten.
Endless

> ⚠ **ATTENTION - LOSS OF DATA**
> **NO WARNING IS GIVEN BEFORE VALUES ARE OVERWRITTEN!**

7.1.3 Logging start / Set Log Start Time

Logging can be started immediately or at a set time later.
Immediately

The log start time is displayed. Activate button [Change] to change the shown settings. The following window opens:
[Change]
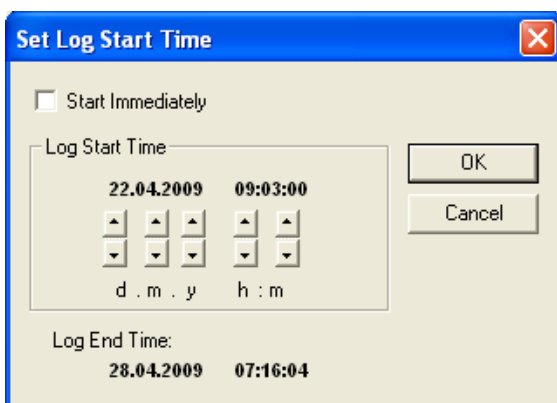
If this checkbox is checked, the start time and the start date are set by the PC.
Start Immediately

Deactivate the check in checkbox "Start Immediately" to set the start time and the start date yourself. Click the arrow buttons to change the time and date settings step-by-step.
Log Start Time

Log End Time   The log end time calculated automatically by the software

7.1.4   Sensors

Use the arrow scroll button to display all the sensors available to the datalogger. You can select the sensor you wish to configure.

7.1.5   Zoom Preset

There may be device-specific deviations for Zoom Preset.

Zoom Preset defines a suitable measuring range for datalogger use. This preset range should not be confused with the measuring range specified for the sensor.

For example, if you only wish to measure temperatures from 0° C to 30° C (room temperature), it is sensible to limit the displayed measuring range. During evaluation, the temperature axis is extended over the programmed measuring range.

However, it is still possible to have the whole range displayed. No readings are lost as a result of zoom presets.

7.1.6   Log Interval

There may be device-specific deviations for Log Interval.

This feature sets the interval during which data are to be collected. The interval and the total duration of logging are shown.

An interval lasting from one second up to three hours can be set.

7.1.7   Module Tag

You can select your own module tag. The text is saved to the datalogger and is available until the next time reprogamming is performed. Normally the tag is about the company, department or the specific logger use.

7.1.8   PIN

You can protect your settings with a password. It is possible to read and evaluate the data without entering a password. However, a password will be required to reprogram the module or save the configuration.

Only figures are accepted.

In the menu window is displayed if a password is set. To enter or change a password, in the menu window point "PIN" click [Change]. The following window opens:

Modifying the PIN

Please enter the new PIN:
(Code 0 (zero): not protected)

OK

Cancel

xxxxxxx
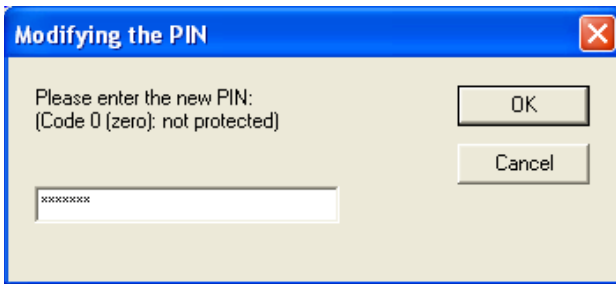
You can enter the following:

| No protection wanted | No code | Menu display: none |
| | Code "0" | No password |

| Protection wanted | Code | Range 1...9,999,999 |
| | HAMSTER Code | Range only 1...65,000 |

Confirm your entries with the [OK] button. To avoid incorrect entries, you are requested to confirm your password by entering it again. The password is not set until both the entered passwords correspond. Now you will be required to enter a password to program the datalogger or save a configuration.

Entering 0 deletes the password again.

⚠ **FORGOTTEN YOUR PASSWORD?**
☞ 8.4 *Datalogger password*

Cancels the entries and closes the menu window. The datalogger configuration is not changed.

[Close]

[Reprogram]

The new settings are saved to the logger.

The old settings are irretrievably lost!

Prints out the datalogger status.

[Print Status]

7.2 Extended Setup

The shown menu window is datalogger-specific. See the datasheets for the respective datalogger if you require further information. The following are examples of extended setup functions:

- Humidity calibration of rH devices
- Assignment of axis parameters at mA and volt devices
- Programming of the alarm parameters
- Setting the time and date of the internal clock
- Defining the language for hardcopies and selecting the printer type
- Programming of the battery change time.

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7.3   Defining the alarm parameters

Dataloggers ECOLOG, ECOLOG-NET and HOTBOX SE
have alarm signalling and an alarm contact. The alarm
parameters are entered in the following window:

Setup of Alarm Parameters

Define the upper and lower alarm thresholds for all sensors S1 to S4, the hysteresis and the alarm delay time.

ECOLOG-NET LH1

☑ Alarm on

Alarm Thresholds
Lower: Upper:

Sensor 1
-10   °C   50   °C

Sensor 2
0   %rH   10   %rH

Sensor 3
-10   °C   20   °C

Sensor 4
0   %rH   30   %rH

Hysteresis
S1,3:   0   °C
S2,4:   0   %rH

Alarm Delay Time
normal: 0   min
defrost on: 0   min
☐ Check defrost
Control line is: D1

Alarm Output
☐ using CRA bracket
☐ self-sustaining

Close

Download

Print Status

Checking this checkbox activates the alarm function.   **Alarm on**

7.3.1   Alarm Thresholds

Fields for entering the upper and lower thresholds for the
sensors.

7.3.2   Hysteresis

The hysteresis is used to prevent "fluttering" (uncontrolled
on/off switching) at the alarm contact. To change the state of
the alarm contact, the deviation of the measured value from
the threshold value must exceed the value defined at the
Hysteresis enter field.

*Do not use Hysteresis
and Alarm Delay Time
simultaneously!*

7.3.3 Alarm Delay Time

normal: In order to trigger an alarm, a threshold deviation must last longer than the time specified in this text field.

Defrost on / Check defrost   If the "Check defrost" function is selected and the switch contact at D1 is closed, the threshold deviation must last longer than the time specified in text field "defrost on" in order to trigger an alarm.

> ⓘ Switch contact D1 at the datalogger is provided for the defrost check function. This switch contact is closed if malfunctioning occurs.

7.3.4 Alarm Output

using CRA bracket: Checkbox to extend the power on time for the piezo beeper of this bracket (only ECOLOG)

self-sustaining

Acknowledging: with PC software or buttons/ alarm plug at datalogger.   The alarm contact usually opens automatically as soon as the threshold violation clears. If this checkbox is checked, the alarm contact remains closed when the threshold violation clears until the alarm is reset manually. Use the PC software or the buttons/alarm plug at the datalogger to acknowledge and reset the alarm.

7.3.5 Alarm contact

The alarm contact is closed when an alarm is triggered. The alarm is triggered independent of the sensor number.

> ⓘ When you are defining the measuring function, you must select all the sensors which may trigger an alarm.

8. Error messages

elproLOG ANALYZE automatically generates error messages if descrepancies occur during the program run. This chapter describes the most important error messages and explains how to remedy them.

☞ 8.2 *Communication History*

A useful means for localising an error is the status of the previous data transfer.

8.1 Communication error

• **Communication error 4 - Timeout**
elproLOG ANALYZE is encountering problems with data transmission:

- Repeat the data transmission procedure several times.
- Select the reduced, static window as read mode.
    ☞ 5. *Initial settings*
- Reduce the transmission speed to 9600.
    ☞ 2.2.5 *Menu - Options*
- If the timing problem continues, you can change the parameters in window: "Extended Communication Settings"
    ☞ 2.2.5 *Menu - Options*; or README.TXT file from elproLOG ANALYZE.

• **Communication error 5 - Module Not Responding**
elproLOG ANALYZE could not establish connection to the interface or the datalogger.

- Is the data cable properly connected?
- Was the correct interface selected?
- ECOLOG dataloggers are only readable during the measuring mode!
- Is the datalogger defective (if possible, connect another datalogger)?
- Is the interface properly connected?
- Are the batteries in the interface empty?
- Perform a communication test to check interface functioning. To troubleshoot, cf. the information about the interface and the batteries.
    ☞ 8.3.1 *HOTDOG & HAMSTER-A* / Interface

HOTDOG only

①
- ECOLOG dataloggers are only readable during the measuring mode!
- ECOLOG-NET dataloggers are not able to respond on multiple access. Therefore, use only one of the following programs at one time: elproLOG ANALYZE, elproLOG CONFIG and elproLOG MONITOR!

• Communication error 13 - Wrong Checksum
This message appears when the data were transmitted successfully but individual values are incorrect due to some kind of fault.

• Communication error
   14 - More Records than transmitted
   15 - Timeout
   20 - Instruction received incorrectly
The data line from the PC to the datalogger is not functioning properly:
- If you are using a laptop PC in battery mode, the signal level can drop. Try connecting the laptop to the mains adapter.
- Defective logger
- The batteries in the interface are empty

HOTDOG only ✎

• Communication error 16 - Incorrect Communication Start
Unexpected characters were received.
- Wrong interface selected. For example, perhaps a mouse is connected to the interface.
- The data cable may be defective.

• Communication errors 18, 22
Communication problem caused by the datalogger.

• Communication error 26 - Invalid Module Type
During reprogramming, a different logger type was connected.

- **38- HOTBOX SE**

Increase transmission rate from 38400 to 57600
(Hotseries4)

- **Communication error 11010; ....**
    - The setting for the transmission rate does not match the connected datalogger.
    - Check the data cable and the position of the connector at HAMSTER-E.

        ☞ *5.2 Connection options*
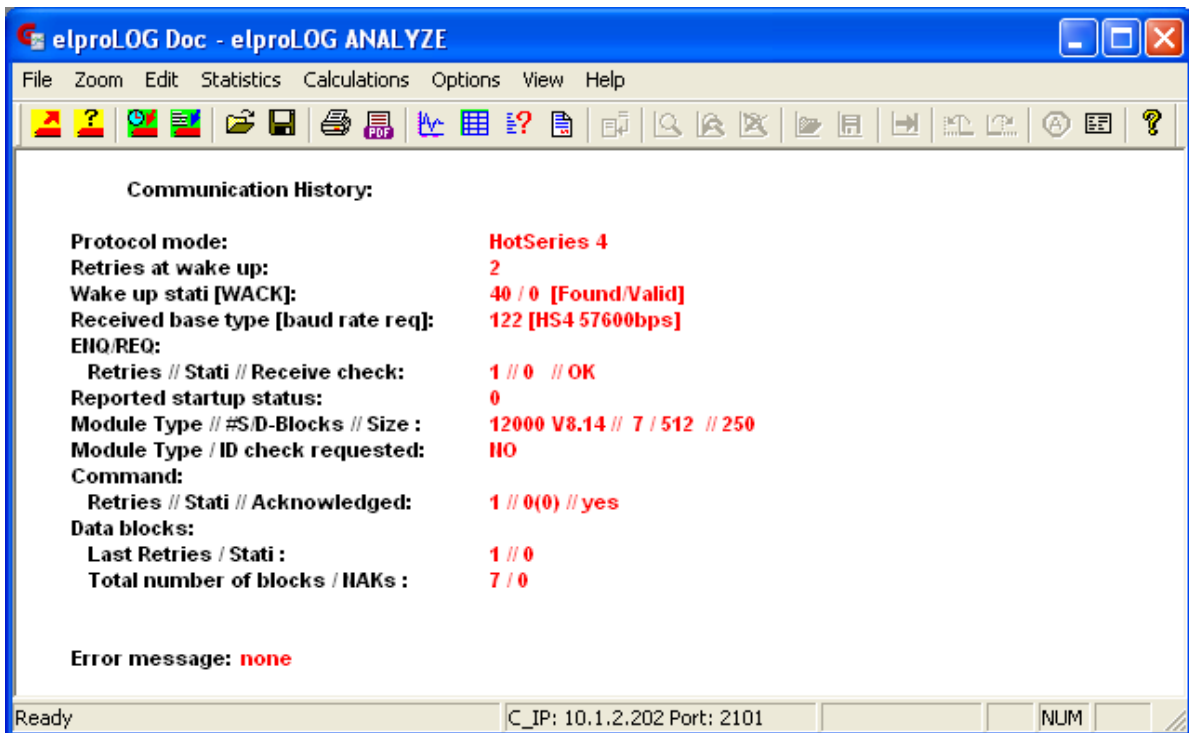

- **1605**

No administrator rights

- **Communication errors 9001, 9002, 9003, 11005, 12005, 13005**

HAMSTER-E error messages

8.2 Communication History

⚠ **THIS INFORMATION IS VERY IMPORTANT FOR ERROR MESSAGES WHICH ARE RELATED TO COMMUNICATION PROBLEMS**

The current status of the last established connection to the datalogger is shown.

- Protocol mode
- Transmission settings (wake-up tries, wake-up status, received base type, etc.)
- Module-specific settings
- Interface settings
- Error messages

8.3 Troubleshooting

8.3.1 HOTDOG & HAMSTER-A

The bottom of the datalogger casing must be clean and level to ensure problem-free data transmission between the HOTDOG / HAMSTER-A and the PC interface.

• **Interface**

if the batteries in the interface are empty, read out the
datalogger again after replacing the batteries.

> ⓘ It may also be necessary to replace batteries after having been able to read out
> several dataloggers without problems.

- Only use high-quality 9 V alkali block batteries.   **Information about**
- Batteries should be replaced at least once a year.   **replacing batteries**

• **Communication test**

You can run the communication test after installing the
elproLOG ANALYZE software and the interface.

1. Start the elproLOG ANALYZE software.

2. If there is a datalogger at the interface, remove it.

3. In menu "File", select menu item "Readout Datalogger"
   to start data transmission.

4. Watch the clear glass bulb at the top left corner of the
   interface:

   The communication test was successful if the LED
   blinks 3 times (once a second).

   If the LED does not blink, check the interface, the data
   cable and PC for problems.

8.3.2 ECOLOG, ECOLOG-NET and HOTBOX SE dataloggers

• **Communication test**

1. Perform a normal read-out.

2. If errors occur, check the connection to the PC and
   make sure that you are using the interface you selected
   in the software.

> ⓘ Watch the datalogger display:
> If "Con" is shown, the communication test was successful.

Replace the battery if the display goes dark during the test.

8.3.3 HAMSTER-E

For proper data transmission between HAMSTER-E and the optical data cable, the connector and the casing must be clean and the connector must be plugged in at the correct position (see HAMSTER-E manual, Chapter 2, CA6001B / CA6002B / CA6003B).

8.3.4 Passivation of the lithium battery in the datalogger

Passivation may occur at all ELPRO dataloggers with internal lithium batteries. The first data readout at the datalogger fails although the battery is still not used up.

Causes of passivation
- The lithium battery and/or the datalogger was stored for a long time.
- The HOTDOG datalogger was used over a long recording period, e.g. 6 months.
- The datalogger was used at temperatures of over 40°C.

What happens?
The internal resistance of the battery increases. Consequently, the increased power consumption during data readout can no longer be met.

Activating the battery
After a load is applied to a battery, the passivation effect disappears by itself after a certain delay.

1. The first readout at the datalogger starts the activation process in the battery.
2. Wait 30 minutes.
3. Read out the datalogger again.
4. Contact the ELPRO customer service department if you can still not read the datalogger.

ⓘ
- New dataloggers with new batteries are prone to stronger passivation than old batteries!
- Data logging and clock functions are not influenced by passivation.

Replacement batteries

> ⓘ Please use the battery type recommended by the manufacturer (Elpro-Buchs AG). Other battery types can cause malfunctioning!
>
> The following batteries are used:
>
> | Datalogger | Battery (part no.) |
> | --- | --- |
> | ECOLOG xxxx: | 2820; Tadiran Inorganic Lithium Battery SL-760 |
> | HAMSTER-Exx | 2820; Tadiran Inorganic Lithium Battery SL-760 |
> | HOTBOX SE | 2820; Tadiran Inorganic Lithium Battery SL-760 |
> | HOTBOX Hxx | 2820; Tadiran Inorganic Lithium Battery SL-760 |
> | HOTBOX-PROxx | 2820; Tadiran Inorganic Lithium Battery SL-760 |
> | HOTBOX Bxx | 2818 |

8.4   Datalogger password

If you forget the password, you must request a master password from the dealer. A mdf file for the particular datalogger is required to generate the master password. This function is available from elproLOG ANALYZE version 3.33.

This master password is only valid for the particular datalogger 🖉

8.5   Information for ELPROcustomer support

Please have the following information ready when you contact ELPROcustomer support:

- Sofware release number.
- Name of the datalogger which is causing problems.
- Do the same problems occur with other datalogger types?
- What activities were performed before the problems started (exact description of your datalogger functions: time, temperature, shock, etc.).
- Exact description of the error, copies of the status report, hardcopies of the graph and the communication history.

In menu "File", select menu item "Info". 🖉

> ⓘ See file README.TXT in the program directory for further information.

9. History

9.1 Version History from V3.20 upwards

9.1.1 Version 3.21

Release date: 11.2003

Menu: Options - Humidity

Menu item: Special representation TH and D-HT has been removed. (temperature compensation of the humidity level for older loggers TH1/2 for versions up to 7.12.02).

9.1.2 Version 3.30

Release date: 09.2004

New datalogger types

- HOTBOX-PRO
- ECOLOG-NET LP4 / WP4
- ECOLOG-NET LH2 / WH2

Menu: Files - Select logger

The function "Select Logger..." was added to menu File in order to simplify the logger selection procedure.

After selecting the required logger, continue reprogramming or evaluating the datalogger following the same procedures you used for earlier versions of elproLOG ANALYZE.

Menu: File - Overlay logger data

For HAMSTER-E

Menu: Options - Com Port

New option: Ethernet:

9.1.3 Version 3.31

Release date: 06.2005

New datalogger

HAMSTER-A

New function

Auto Detect

☞ 5. *Initial settings*

Menu: File - Overlay logger data

- HOTBOX SE
- ECOLOG-NET LP4 / WP4

Reads and saves a group	**Menu: File - Read and save mode**
☞ 6.2.2 *"Data read with auto-save"* mode	

9.1.4   Version 3.32

Release date: 11.2005

ECOLOG-NET LA8 / WA8	**New datalogger**

9.1.5   Version 3.33

Release date: 04.2006

ECOLOG-BT TN4	**New datalogger**

9.1.6   Version 3.40

Release date: 09.2006

Envirotainer RAPID	**New datalogger**
New function: Printing options; you can select the following information: graph with the required print information and graphic settings, status, alarm protocol, table, report, audit trail. With the exception of the table, all the print outs are tagged with user name, date and information type. The above information is printed in a multipage document.	**Menu: File - Print**
Templates are saved in the program directory in file: ELOGWIN.TPL and can be copied to other PCs.	**Menu: File - Edit Printout Description...**
Window used to define the contents of the PDF file to be created. Possible contents are: graph with the required print information and graphic settings, status, alarm protocol, report, audit trail.	**Menu: File - Create PDF**
Functions for mailing mdf and/or pdf files in the same e-mail. Using a standard or a variable receiver address.	**Menu: File - Send mail...**
Specifies the zoom range using time / date	**Menu: Zoom - Date & Time**

> ⓘ The following functions replace the older, less flexible configuration functions in menu: Edit.

Menu: Zoom - Open Zoom	Restores saved graph settings.
Menu: Zoom - Save Zoom	Saves current graph settings (zoom, axes, marker points, print info with templates...).
Menu: Zoom - Remove Zoom	Deletes saved graph settings

> ⚠ **THIS FUNCTION IS NOT AVAILABLE IN THE ELPROLOG ANALYZE QLS VERSION**

Menu: Edit -Add Report Entry	Window used to enter a new comment. Previous entries can not be changed or deleted. Each entry is automatically provided with user name and creation date.
Menu: Edit - Program Settings	- Working directory - Directory with print templates - Standard e-mail address which is used for all e-mails except when the address is changed manually
Menu: View - Report	Displays the additional information added by all the users.

9.1.7   Version 3.41

Release date: 03.2007

New function	Audit Trail with Entry: Alarm protocol
Menu: File - Import Libero Data	This function imports pdf files from the Libero datalogger. The function is part of menu File Datei, "Import Libero Data". The imported data can then be used like normal pdf files.

Menu: File - Print

Menu: File - Create PDF

You can select: "Report" in the printing selection window

9.1.8 Version 3.50

Release date: 12.2007

- Name changed from elproLOG to elproLOG ANALYZE	**Software**
- Released for Windows VISTA	
- New installation program	

9.1.9 Version 3.60

Release date: 09.2008

- elproLOG USER	**Software**
- Language: French	
- Work directory = Default PDF directory	

9.1.10 Version 3.61

Release date: 12.2008

- Libero Ti1-D	**New datalogger**
- Libero Ti1-L	**types**
- Libero Te1-N	

9.2 Document revision history

Author	Date	Version	Description
A. Gubler	24.04.2009	-	First edition

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