Operating Manual
GSOFT40K
as of Version 7.16

CONTENTS

1 General Advice

Required Basic Knowledge

Die This manual takes it for granted that the reader has a basic knowledge of how to operate a PC with Windows™ Unless this is the case we recommend that the operator acquires a basic knowledge of Windows™ prior to the installation (manuals, technical literature, introductory lessons, etc.).

Software License Agreement

We kindly ask you to thoroughly read the agreement on software licensing on the CD wrapper. By opening the wrapper you agree to comply with the regulations.

System Requirements

- IBM compatible PC (Pentium™ or better), approx. 15 MB free space on hard disk, at least 32 MB RAM
- Windows™ 98, NT 4.0(with Service Pack 3), 2000, XP, Vista
- graphics card with resolution of 800*600 pixels or more
- CD-ROM, mouse
- one free serial interface (COM1...255)

Software – Scope of Supply

- **GSOFT40K:** operating software for the loggers of the EB-Logg – series (as well as MINILOG and T-Logg ...)
- sample files (in sub-directory GSOFT40K Samples)
- **EASYBUS-Configurator**: configuration software for EB3000, logger and other EASYBus-modules
- **EbxKonfig**: configuration software for logger and other EASYBus – modules
- **MODKonfig**: EASYBus-MODEM configuration software for obsolete MODEMs (for use with remote operation)

Importance of the Computer Clock Time

To guarantee trouble-free operation the computer clock time has to be checked prior to starting the program; re-set if necessary. GSOFT40K displays both time and date in the bottom left-hand corner; both can be corrected using Windows™ - system control. Please make sure that the correct settings regarding the time zone (summer time / winter time) have been chosen.

Delivery State of the Data Loggers

During delivery the EB-Logg´s are in a so called 'sleep state': there are no indications on the display and the current consumption is at its minimum. As soon as communication with the software has been started the device will 'wake up', the display changes between the current measuring value and 'stop', the data logger is ready for operation. So far no data are recorded! To do so a new logger recording has to be initiated (p.r.t. pages 3 and 5).

2 Installation And Commissioning

Software Installation
- start Windows
- place CD in CD-ROM disk drive
- start ‚GSOFT40k V7_16 SetupX.exe' – file or the contained file of your CD
- continue in accordance with the instructions given by the installation program

Starting the Software
The software can be started by clicking on the ‚GSOFT40K' icon. To do so click on ‚Start' at the bottom left-hand corner of your screen, select ‚program' and then ‚GSOFT40K': Select the icon named ‚GSOFT40K'.
When starting it for the first time the program will ask you to enter the language and to configure at least one logger connection. For a detailed description please refer to the last chapter of this manual: 'Configure Logger Connections'.

3 Operation Of Loggers With GSOFT40K – Step By Step

Make all necessary connections and start the GSOFT40K program (see above). Don't forget the supply of the converter!

Step 1: Link to Connected Loggers
In order to be able to operate loggers you have to 'connect' them: Select 'Connect' in the ‚Logger' menu. If there had been configured more than one connection, a choice of the connection will appear – choose the desired one.
A list of the loggers found of the last access will be displayed. The search for connected loggers may be repeated by ‚New Search' Select loggers with which you want to operate (tick by mouse-clicking on the relevant loggers). ‚Ok' connects the loggers selected in one ‚logger window' each. If no loggers can be found please check your set-up and your interface configuration ('Logger Connection' in 'Configuration' menu).

Step 2: The Logger Window
The logger window displays all the important data of the relevant logger.
 Select register of logger window to be displayed by mouse-click!
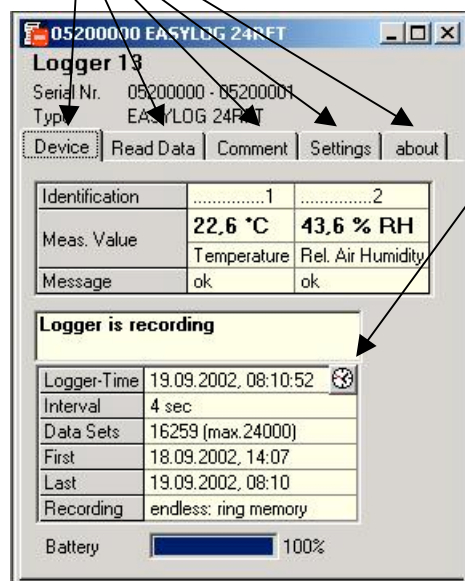
Register ‚Device'
(not available if logger window has been opened from file!)
The information displayed will be regularly updated.

This symbol is shown for loggers with internal real-time clock.
Use symbol to set real-time clock to PC time.

Register ‚Recordings'
(only appears at loggers with multiple recordings functionality)
To load the data of the referring recording, double-click the recording.

Register ‚Read Data' (for logger windows from file: ‚data')
Logger data that have been loaded in the PC from a file or from a connected logger will be displayed in form of a table. To display a 'legend' activate the item 'Show Legends' in the 'Logger' menu.

Hint: ***Use mouse to change window size to be able to indicate more data simultaneously.***

Register ‚Comment'
Use this register to enter a comment regarding the logger data. The comment will be memorized in a file.

Register ‚Settings'
Display of all editable logger settings

Register ‚about'
Display of all other logger settings and information's

Please note the following for the **Register ‚Settings'**: If the logger already contains recorded data the settings can only be changed if the data in the logger memory are deleted!

Hint: Instead of making your selection via menu, simply click on the 'toolbar': Put your mousepointer on the symbols (without clicking) to get a short description of the function.
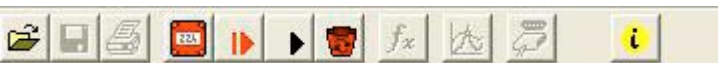
Detailed description: chapter 4

Step 3: Start New Logger Recording

To start a new logger recording select ' Start New Logger Recording' from the 'Logger' menu. (Unless you have already done so: link to connected loggers, see above).

Note: ***Data that have already been recorded will be lost after a new logger recording has been started!***
               Read the logger data and save them into a file, if necessary! (p.r.t. step 6)
               Alarm limits and identification will have to be entered prior to the start (p.r.t. step 2). Upon logger start the logger time will automatically be updated to the current time.
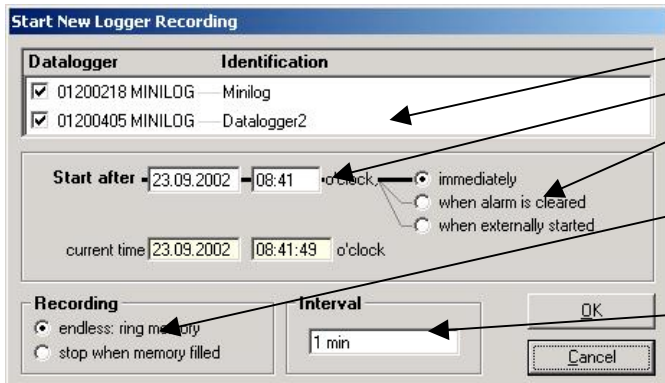
Select logger to be started
Enter time as of which logger is to be started
(p.r.t. chapter 5)
Selection of starting conditions
(p.r.t. chapter 5)
Type of memory
(,*endless: ..*': permanent recording, if memory is full, the data at the beginning of the memory will be overwritten)
Interval: 2s...5h(depending on logger).
ex..: ,15 min' -> logger recording measuring value at 15 min intervals

Further description: chapter 5

Step 4: Read Logger Data

Link to connected loggers unless you have already done so (see above).
To read out data of a logger recording select 'Read Logger Data' from 'Logger' menu; the relevant window will be opened. If more loggers are connected that may contain data, you can either read 'all data' of the loggers selected or select a common period of time.
The data that have been read out will be displayed in the register 'Read Data' in the table.

Step 5: Stop Logger Recording

If the logger is not used for a longer period of time the battery service life can be extended by stopping the logger. Once stopped the logger is only measuring if connected to a level converter (logger supply via level converter). To stop logger select 'Stop Logger Recording' from the 'Logger' menu (unless you have already done so: link logger, see above).

Please note: Older logger versions will loose their recorded data as soon as logger is stopped !

Step 6: File Operation: Saving And Loading

It is possible to attach a comment (logger window register 'Comment') to the data read in via the logger so that they can be stored in data files: menu 'File – Save' or 'File – Save As'.
Data that have been saved can be displayed again by means of the 'File Open' command.

Attention: Do not mix up with 'File – Save View' or 'Open View' – p.r.t. chapter 11.

Hint: ***The files saved at last will be displayed in the menu 'File' and can be opened by means of a mouse-click.***

Step 7: Erasing Loggerdata

All recorded data in logger memory can deleted with the symbol [symbol] on toolbar.

Attention: all recorded data will be erased!

4 The Logger Window – In Details

You have a choice between 6 different registers:

- *Device* (not available if logger window has been read from file)
- *Recordings (only for loggers with multiple recordings functionality)*
- *Read Data* (or *Data*, if logger window has been read from file)
- *Comment*
- *Settings*
- *About*

Headlines displayed above the registers: - Window title (can be edited in register 'Settings')
- logger serial number and type

4.1 Device
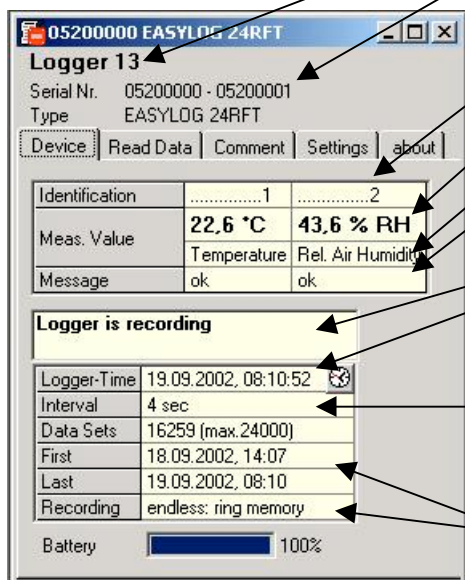
Identification: (only if supported by logger) can be altered under 'Extras' and will be stored in the logger

Measuring value: current meas. value, continuously updated

Measuring type (if supported by logger)

Message: read out of messages referring to the measuring values (p.r.t. chapter 13)

Logger state messages: displays state of the logger recordings.

Logger-time: if the logger is equipped with a real-time clock this will be indicated here (may be set to computer time by means of clock symbol); if not, the computer time will be displayed.

Interval: intervals at which measurements are made and stored in the logger memory, e.g. ,15 min': a measurement is carried out every 15 min, the result is stored in the logger (will be stated in case of a new logger recording start)

First..Last: time of the first and last measuring value taken

Battery: state of the logger battery, we recommend to return the logger to manufacturer's for a battery change if the value falls below 100%.

4.2 Recordings (only for loggers with multiple recordings functionality)
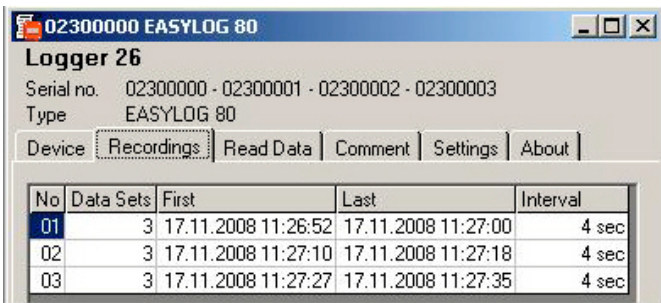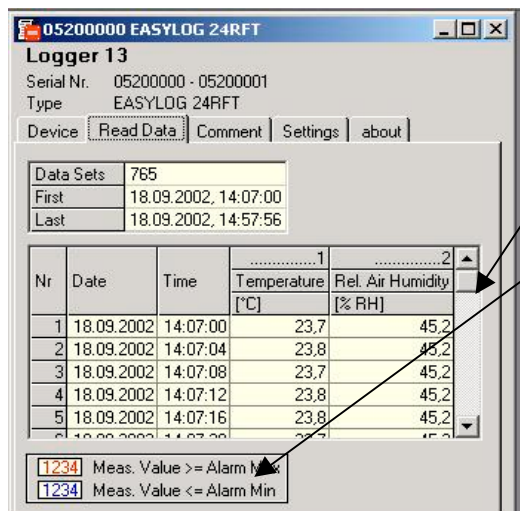

Via clicking the register "Recordings", the existing recordings are displayed.

To load the data of a recording, double-click on the referring list element.
Alternatively the recording can be marked and loaded with the ▶ symbol of the toolbar

4.3 Read Data

If there are logger data in the memory they can be read out (menu 'logger – read out logger data') and be viewed in form of a table.

Scrollbar: use scrollbar to go through the table

Legend: explanations regarding the data (only possible if menu 'Logger – Show Legends' has been activated).

Hint: ***The logger window size can be adjusted as you wish by means of the mouse. To be able to display more data simultaneously simply change window size!***

4.4 Comment
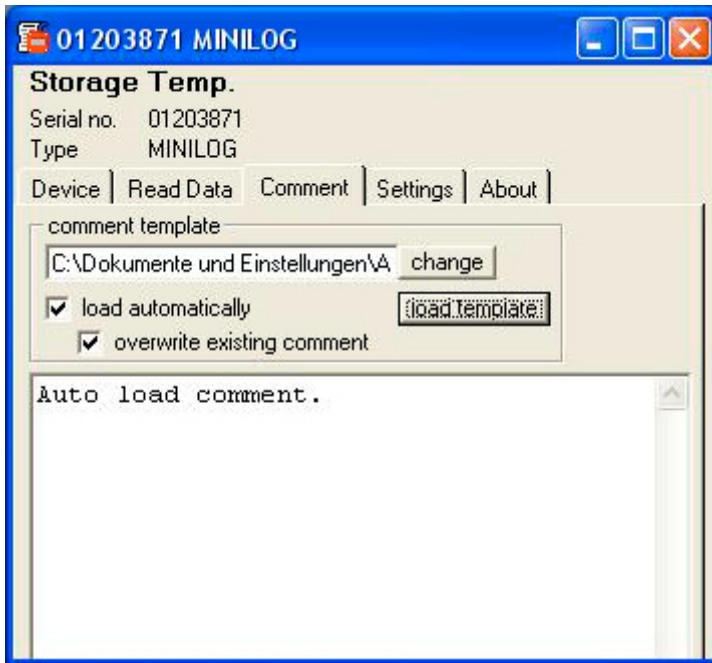
As soon as the logger data have been read you may enter your comments here.
The comment can be printed together with the tables.
If logger data are saved as a file, the comment will also be saved in the same file automatically.
This is an important function to help you describe logger data so that you will be able to identify and assign them even after a longer period of time.

Furthermore there is the possibility to load recurrent comments in form of a template
To do so, enter a suitable text-file (only .txt-format!) via button "change".
Via button "load template" the text will be loaded manually to the window.
If "load automatically " is activated, the previously selected text file is loaded automatically, whenever Logger data is read out.
The comment can be edited afterwards as usual.
When "load automatically" activated, then "overwrite existing comment" is selectable. This function overwrites the existing comment, when the logger is read out.

4.5 Settings

Display of all the editable properties and settings of the logger.

Please note: If the logger contains recorded data the settings can only be changed if the data are deleted!!
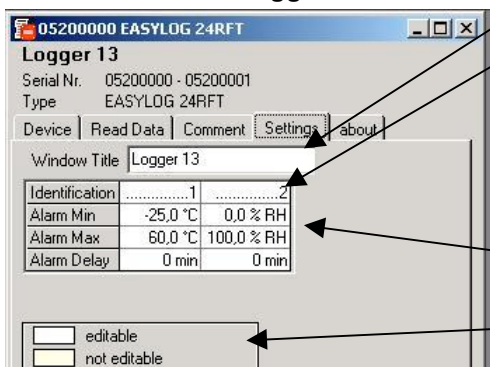
The **Window Title** can be edited here
Identification (up to 16 digits, older logger types do not support an identification, ,---' will be displayed then)
The identification is displayed at the top of the logger window and will help you to identify the logger. We, therefore, recommend to choose an identification with regard to the logger position, e.g. 'cooling area' or 'climate room 1'.
Alarm- Min, -Max, -Delay:
input of alarm delay as a multiple of a minute, older logger types do not support an alarm delay, the display then is always 0 min.
Legend: description regarding settings (only available if menue 'Logger – Show Legends' has been activated).

4.6 About
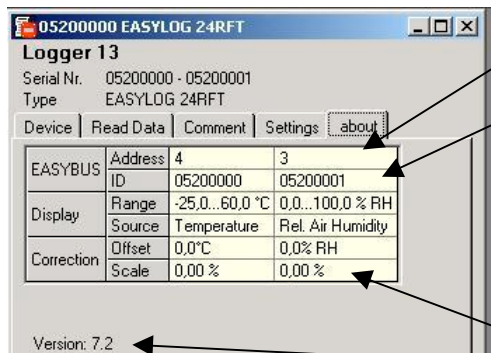
Display of all the remaining properties and settings of the logger.

EASYBus -Address: cannot be changed via GSOFT40K. To do so please use our EBxKonfig software.

Display data
- **Range**
- **Type of measurement:** older logger types do not support a type of measurement display, ‚---‘ will be displayed then.

Measuring data (not displayed here):
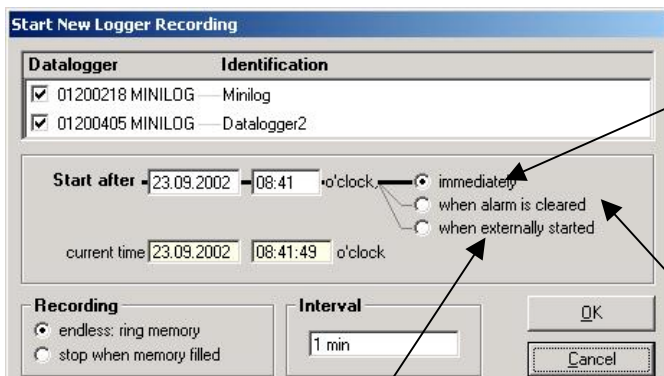For loggers with different display and measuring settings
(e.g. EB-Logg 40NS) the measuring data is additionally displayed here
Correction: if supported by logger
The **Version** number of the logger

5 Start of the Recordings And Starting Conditions

When starting a new logger recording you have a choice between various starting conditions:

Start at a certain point of time or immediately:
Logger recording starts as soon as the time set has been reached. If the time is not changed the loggers selected will start immediately. (this selection is sufficient for most applications)

Start when alarm is cleared: the logger recording will only start if all alarms have been cleared even if the time set has already been reached.
Alarm is given eg. if the meas. value is smaller than the min. alarm limit set (logger window register ‚Extras‘).

Start when externally started: the logger recording will only be started externally, even if the time set has been reached. An external start can be carried out on site with the help of the ‚EBSK-1‘ starting key.

Please note: The logger time will be set to computer time after every new start.

Application Examples:

Start a recording at a certain point of time:
Set logger, start new logger recording via the option 'immediately' and the point of time desired.
The logger display alternates between the measuring value and ‚St.dE‘ (= start with delay). Disconnect logger and take to place of application.
Recording starts as soon as the point of time has been reached, ‚St.dE‘ disappears.

Place of logger application not in the vicinity of a computer, recording to start at place of application:
Set logger at computer, start new logger recording series via the option 'when externally started' The logger display alternates between the measuring value and ‚St.Et‘ (= wait for 'external start'). Disconnect logger and start at the place of application by pressing the button of the starting key ‚EBSK-1‘: Logger recording starts, ‚St.Et‘ disappears.

Application is not in the vicinity of a computer but in a cooling area with ~ –10°C. Recording to start after logger has been placed there.
Set max. alarm limit of logger to 0°C; set min. alarm limit to –20°C. Start new logger recording series via the option 'when alarm is cleared'. At room temperature (>0°C !) the logger will be at max. alarm (logger window: register 'Device' – 'Message'); the display alternates between the measuring value and ‚St.Al‘ (= wait for ‚start alarm‘). Disconnect logger and place it in cooling area. As soon as the logger temperature in the cooling area falls below 0°C the alarm will be cleared and the logger starts recording, ‚St.Al‘ disappears (no computer required at the place of application).

6 Measuring Value Diagrams

The logger data and logger windows loaded can also be displayed as diagrams.
To do so select 'Create New Diagram' from the 'Diagram' menu.
A selection of all possible graphs will be displayed. Select the graphs desired and acknowledge selection by pressing 'Ok'. The diagram will be opened.

System limitations: *- max. 2 different units (°C, % RH. etc.) per diagram*
                                  - max. 15 graphs per unit

Y-Axes: if you select graphs with different units, two Y-axes will be displayed.

Zoom Left/Right y-Axis: chose here if the mouse zoom function is to be applied to the left or right Y-axis.

Zoom Back: cancel last zoom action

Change Name: The name of the diagram (here: 'Diagram 1') can be changed

Add/Delete Labels: to describe measuring points (see below)

Settings: manual zoom, grid and color settings

Add/Delete Series: the number of graphs displayed can be changed (see below)

Zoom all: Show max. diagram area

Display Points: Display (marking) of measuring points

Scrollbar: if a zooming action has been carried out the scrollbar can be used to 'go through' the diagram.

Cursor: if activated a crosshair cursor will be displayed to show the individual measuring points. The measuring point data will be displayed in the statusbar.

Legend: if activated a short description of the graph will be displayed.

Adding Data Labels
To add a comment to a specific measuring point select menu item "Diagram/Add Data Label" or click on the corresponding symbol. By moving the mouse over the diagram the ⌐XY symbol will appear as mousepointer. A text line that can be filled freely will be placed at the position desired by a mouseclick

Adding Series
To be able to display additional measuring series in a diagram, select the menue item "Diagram / Add Series" or click on the corresponding symbol of the diagram window. The data source selection will appear again for you to select an additional measuring series.

'Zoom': Enlarge a Area of the Display
If 2 units are displayed : Use the [🔍] and [🔍] symbols to select the Y-axis desired.

Place mouse at the beginning of the area desired, keep left mouse key pressed, move mouse to the end of the area desired, release mouse key: the part selected will be enlarged (zoomed). Use "Diagram – Zoom Back" to get back to the original view. Use "Diagram – Zoom All" to get back to the entire diagram.
Use scrollbar to move the zoomed part to the left or right or upwards and downwards. To display exact parts of the screen we recommend using the "Diagram – Settings". This function can be used to enter the exact position (entering of figures and time settings) of the segment to be displayed.

Copying Data To Clipboard
Diagrams can be copied to the clipboard, from where they can be inserted to other applications again.
Click on the desired diagram and press the key combination **Strg and C** -> The diagram will be copied to the clipboard as a bitmap.

7   The Function Window – Working With Data

The logger data can be processed further in function windows. This windows are very similar to the logger window (p.r.t. chapter 4). As soon as a logger window with data is loaded the menu ‚Function – Create New Function Window‘ will call the function input window ‚Add Function‘. Three mathematical functions are included: ”scaling”, ”scaling and summing up” and “dew point”. A description of the function will be displayed up right in the window. After all necessary inputs are made, the input can be finished by ‚OK‘, the results will be displayed in form of a table. Up to 10 functions can be displayed in a single function window. Just add the desired functions with the menu ‚Function – Add New Function‘. Only data of the same source (logger window) can be added.

The fields ‚Name‘ and ‚Unit‘ should be filled up with senseful words that provide information about the data – they can support a clear display with the table columns.

7.1   Application example ‚scaling‘: Conversion from [°C] to [°F]

Temperature [°F] = 1.8*Temperature[°C] + 32

This formula can be entered with the function 'scaling':

The source is a logger window with data in the unit [°C], which has to be opened before calling up the input window.

7.2   Application example ‚scaling and summing up‘: Computing an overall consumption

With the pulse logger EB-Logg 40IMP and a suitable flow sensor with pulse output the flow can be measured in [litre/minute], assumed that the logger was previously set by means of the software EBxKonfig to the right settings.

Example:

An application with the maximum flow of 5 litres per minute should be surveyed. The pulse count of the sensor is 400 pulses per litre.

Setting of the parameters by EBxKonfig before the starting of the recording:

Start EBxKonfig, ‚connect‘, ‚Logger Adjustment‘, input of:

maximum 2000 pulses within 60 seconds, display value 5.000

The EB-Logg40IMP is able to count a maximum of 30000 pulses per logger interval. For a recording time range as long as possible the maximum logger interval can be calculated:

Interval = *max. pulses per interval* / (pulse count **max. flow*)= 30000/(400*5) = 15 min

Afterwards the recording can be started with GSOFT40k with an interval of 15 min.

The read out data can be scaled and summed up in a function window by using the following steps:

scale = logger interval [min]

please keep in mind: the overall consumption recording is limited by the size of the logger memory. For this example:

48000 values * 15min/value = 500 days or ~1,35 years. With that a year is covered with a good time reserve.

8 Autoread-Function: Automated Reading Out Of Loggers

By means of the autoread function loggers can be read out at previously chosen points of time (each day, week or month). This is very useful, if the connected computer is permanently switched on. Then the data can be read for example by night, and the logger data is available in file form during the working day without additional delay resulting of loading times.

If a report file name is stated, all the actions of the autoread functions will be stored in this file.
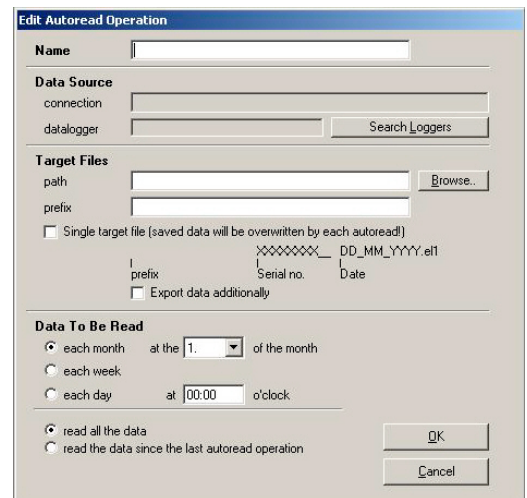
8.1 Entering Autoread-Functions

Each automated reading out can be defined by a referring autoread function. Choose ‚Autoread-Function...‘ in the Menu 'Configuration'. The list of all autoread functions will appear:
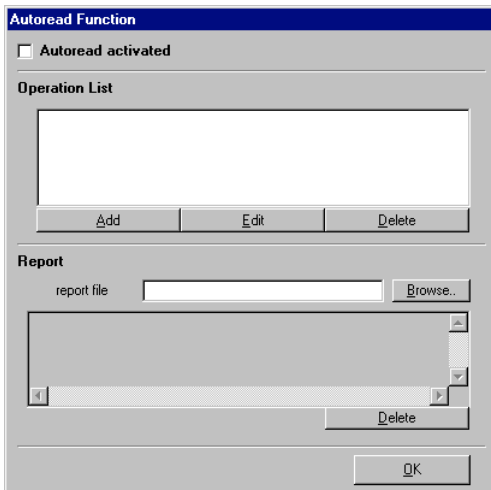
By 'add' a new function can be added to the list, already existing functions can be edited by ‚edit‘.

By clicking add, following dialog will appear:

The **Name** will be displayed later in the list of autoread functions, **data sources** are the loggers to be read out. **Target files**, in which the read data are saved are entered in to steps: First the path has to be entered, in which all the referring datafiles should be saved, then the file prefix has to be entered. This is the first part of the resulting file names, the second consists of the serial number of the logger and the date of the reading and will be automatically added to each resulting file. Example: Prefix is ‚BackupLogger1‘, the function will be performed at the 21st November 2001 and the serial number of the logger is 02200001. The resulting file name is 'BackupLogger1_02200001__21_11_2001.elf'.

This file wile be saved after the autoread automatically in the previously entered path. The data to be read in can be adjusted to Your needs.

8.2 The Processing Of Autoread Functions

Assumption for the processing: The GSOFT40k has to be activated (list of autoread functions, see above). The state of the autoread is displayed in the status line at the bottom of GSOFT40k. As soon as the point of time of the autoread function is coming up the function will be processed. The software automatically connects to the loggers, reads their data and saves them to a file each. If a logger is connected when the function arises, a choice is displayed, if the function should be postponed or not. If the software gets no reaction on this message, it will start the autoread after a small period of time.

8.3 Catching up Autoread Functions

If the software is closed during activated autoread, at the next start of the software it will be checked, if there would have been autoread operations in the mean time. If so, this operations will be performed (if the logger has enough data in its memory). The software tries to execute the operation as if the operation would have been performed to the intended point of time.

(e.g.. weekly autoread operation at Sunday 12:00, the software was closed for 4 weeks. When restarted, the software tries to catch up the missing 4 weekly autoread operations and to produce the referring 4 files).

Info: If the autoread was deactivated and afterwards was reactivated, a catching up is not tried, the autoread operations will be treated like newly attached.

8.4 Report File

If a filename and directory for the report file is entered, all interesting events concerning the autoread are documented. Eg. Activation/deactivation, stopping the software or success/failure of the referring autoread operations.

9 How to Print Data

The selected window (logger window with data or diagram) can be printed via 'File – Print' provided a printer has been installed to the computer. Use 'File – Printer Setup' to change printer parameters or to chose another printer.

If the diagram is not printed: for some types of graphics cards it may happen that the diagram will not be printed if the colour depth is set to 16 bit. In such a case please reduce or increase the colour depth of your screen display.
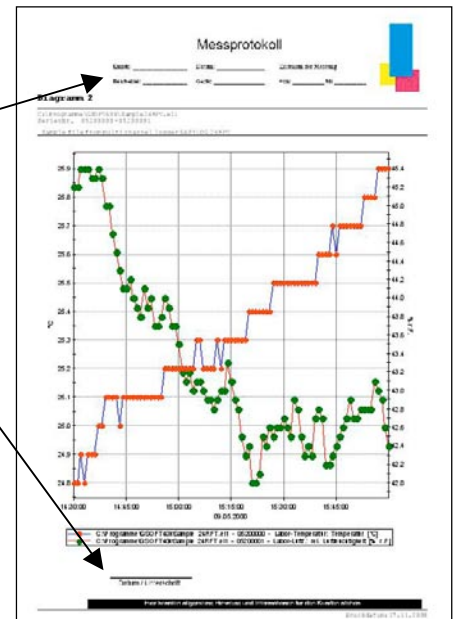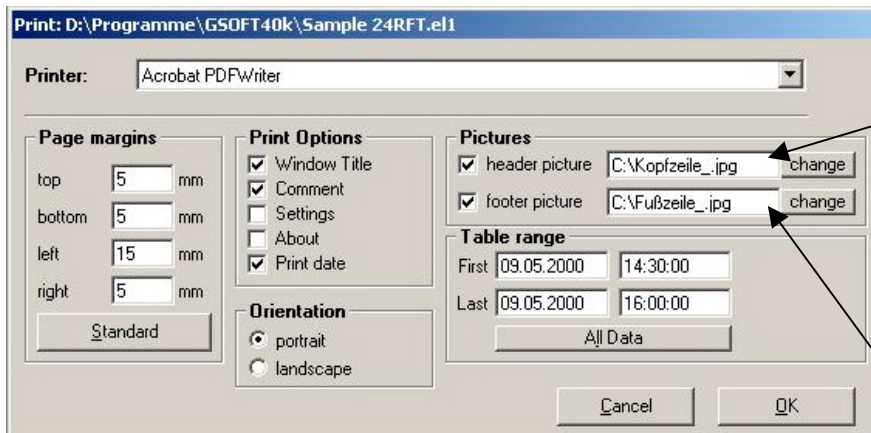
Under „Pictures" additionally header or footer pictures can be integrated to the printouts.
The pictures or other templates have to be saved as .bmp, .jpg or .icon format
(By this feature picture size must matched before).
The printout can be extended to a individual form by simple means.

10 How to Export Data

Logger data can be stored as ASCII (=text) – files so that they can be used with a word processing or calculation program. To do so please select the desired logger window and select 'File – Export'. Another window will be displayed for you to select the settings required. Normally the pre-set values will be sufficient.

11 How to Work With "Views"

Use your mouse to position logger and diagram windows on the screen as desired. The resulting view can be saved via "File / Save View". If, later on, the view is downloaded via "File / Open View", the complete view, including diagrams and settings, will re-appear.
Limitation:
-    The connected data loggers' settings at the bus must be identical to the settings at the time the memorising functions was carried out.

12 Configure Logger Connections

If the software is started the first time or if the menue ‚Configuration' / ‚Logger Connection' is selected, the following window will be displayed:
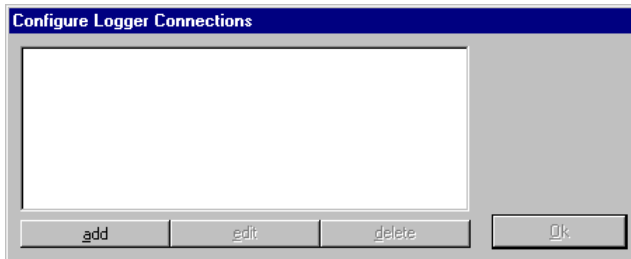
Choose ‚add' to add a logger connection to the connection list. There can be added as much connection as needed, the settings can be altered anytime by selecting the desired connection and clicking on ‚edit'. A correct setup is necessary for the proper functioning of the software!

After clicking ‚add' the following window will appear:
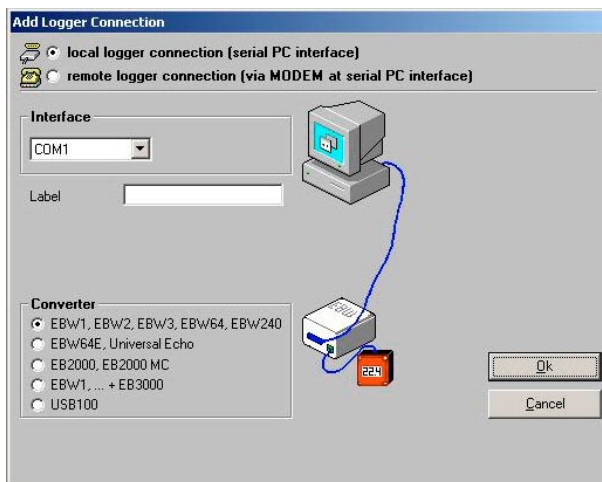
- Local logger connection means:
The logger(s) are connected directly to the PC via EASYBus converter (as shown in picture)
- Remote logger connection means:
The logger(s) are situated somewhere completely else, where they are connected via EASYBus converter to an industrial analog or GSM modem (as shown on next page).
The PC also is supplied with an analog modem, so the loggers can be operated and read out via ‚telephone' (for details see below).

Choose the referring setup of the connection, afterwards there can be added as much more as necessary!

Configuration Of a Remote Logger Connection:

When configuring a remote logger connection there has to be entered a random label (or name) at the point ‚Remote Logger Connection' and the phone number of the industry modem at which the loggers are connected.
This industry modem has to be a specialised device, adopted to the EASYBus - data transfer (e.g MODEM 1000, MODEM 2500 HS, MODEM 3500 GSM). For the modification of the most important modem settings the software ‚MODkonfig' is included within the GSOFT40k-CD.
The modem at the PC can be any commercially available analog modem. For this one there isn't any setup-work necessary.
The only restriction in remote logger connection is, that the logger addresses has to be in the right order (1,2,3...), otherwise the loggers cannot be detected properly. The MODKonfig software supplies the function ‚prepare EASYBus for remote operation'. This function allows to check if the loggers are in right order (and to reorder them on demand) already before the EASYBus is installed at its final location.

Attention!   If the analog PC modem is connected to a telephone equipment/central there maybe entered additional numbers/sign to get connect to the standard telephone net.

Note!   **As long as loggers are connected via modem, there is a telephone connection active! To keep control over telephone bills keep in mind to hang up the phoneline after the operation. Active phone connections can be disconnected for example after closing the referring logger windows. The state of the phoneline is displayed in the status line at the bottom of the GSOFT40k.**

13 State And Error Messages

Messages in the Logger Window Register "Device"

logger recording stopped:　The logger is in the 'sleeping mode'. No recordings are made.

logger is recording:　The logger is active.

min. alarm:　Values have fallen below the min. alarm limit.

max. alarm:　Values exceeding the max. alarm limit.

low battery:　We recommend battery change at the manufacturer's.

measuring range overrun:　Values exceeding the max. permissible measuring value, measuring data no longer valid (measuring value – display: "error").

measuring range underrun:　Values below min. permissible measuring value, measuring data no longer valid (measuring value – display: "error").

system error:　Sensor or measuring electronics is defective. We recommend to return the device to the manufacturer's for repair, measuring data are no longer valid (display "—").

Logger – Error Messages During Recording

The following error messages have been filed in the logger memory and will be displayed in accordance with the table view selected (e.g. 16352,0).

low battery:　We recommend battery change at the manufacturer's.

measuring range overrun:　Values exceeding the max. permissible measuring value.

measuring range underrun:　Values falling below min. permissible measuring value.

recording error:　The data logger operation has been interrupted.
Please note that once this message has occurred all data recorded so far will not be valid.