

Operating Manual

EASYControl

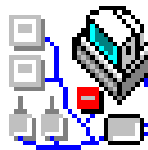
Measuring Software for

Up To 239 EASYBUS Sensor Modules

15 RS485 Sensor Modules Type 'GIA/GIR'

1 GMH 3xxx Measuring Instrument

as of version 2.5



EASYCONTROL

File Recording Error View View Configuration Help

Measurement Recording

Name	Last Value	Alarm Min	Alarm Max	Unit
Outside temperatur	18.5	17.0	20.0	°C
Outside: Humidity	55.4	40.0	60.0	% r.F.
Office 1: Temp.	19.0	18.0	21.0	°C
Office 1: Humidity	56.3	0.0	100.0	% r.F.
Office 2: Temp.	20.4	-24.0	60.0	°C
Laboratory: Temp.	19.4	0.0	20.0	°C
Show-room: Temp.	19.6	-25.0	60.0	°C
Dressing-room: Temp.	19.5	-25.0	60.0	°C
Cold room: Temp.	19.6	22.5	24.5	°C
Cold room: Humidity	51.6	0.0	100.0	% r.F.
Storage room: Temp.	18.2	-25.0	60.0	°C
Water temp.	17.7	-50.0	150.0	°C

Start: 07.04.1999 14:42 o'clock

EASYControl

Error View

Time	Name	Errormessage
07.04.1999 14:42	SYSTEM MESSAGE	Recording starte
07.04.1999 14:42	Cold room: Temp.	min. alarm

Start: 07.04.1999 14:42 o'clock

07.04.1999 14:43 C:\EASYCON\TESTLAUF.MI 11% 60s COM2: EBW64E

This manual may be subject to changes

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1 General

1.1 Software

1.1.1 Software Operation

Unless the user of this manual has a basic knowledge of how to handle a personal computer and work with the operating system "WINDOWS", we recommend that he acquires some prior to installation of this software (operating manuals, specialised literature, introductory courses etc.)

1.1.2 Software License Agreement

We kindly ask you to carefully read the software license agreements on the disk package. By opening the package you agree to the stipulations mentioned.

1.1.3 Software Registration

Get registrated! It pays!

Being a registrated customer of GREISINGER electronic GmbH brings the following advantages to you:

Technical support: It is only our registrated customers who will receive support with regard to technical questions relating to the program.

Low-price update offers: It is only registrated customers who may use our low-price update offers!

Latest information: We constantly expand our scope of supply. It is only registrated customers for whom we can guarantee immediate information on new or modified products. We want you to be up to date!

Your opinion counts: Let us know your wishes and recommendations. Your opinion counts and may be used when we modify existing, or develop new, products.

A blank registration form is included. Simply fax us the completed form.

1.1.4 System Requirements

- IBM compatible Pentium or better
 - at least 10 MB hard disk capacity available, CD-ROM disk drive
 - at least 32 MB main memory
 - WINDOWS 5, 98, Me, Windows NT, Windows 2000 oder Windows XP
 - mouse or similar pointing device
 - one unassigned serial interface
 - **EASYbus** , consisting of
converter (e.g. EBW 1) and serial interface cable
wired **EASYbus** sensor modules
- or:
- RS485-Bus consisting of
GRS485 Converter and serial interface cable
GIR/GIA-Type sensor modules, properly wired
- or:
- one GMH 3xxx measuring instrument and a GRS3100 interface adapter

1.1.5 Software Installation

- Start Windows
- Insert installation CD in CD disk drive
- start ,setup.exe' - file from the directory \disk1 of the CD
- Carry out further instructions given by the installation program.
- A new program group 'EASYControl' will be created.



Fig. 1.1-1: Program group 'EASYControl'

The program desired can be started by double clicking on the referring icon with the left-hand mouse button.

A new entry 'EASYControl' will be made in your 'Start' menu.

1.1.6 Significance of Computer Clock Time

In order to ensure that the **EASYControl** software will be able to establish the exact time for any measurement carried out the computer time of the PC used has to be checked and corrected, if necessary, prior to start-up of the program. The **EASYControl** software displays the time and the date in the lower left-hand corner of the program window and may be corrected by using the Windows system control.

1.1.7 Do not use Standby or Power save!

The PC must not be switched to standby or similar power saving operation modes, otherwise the **EASYControl** clock can be effected massively and the recording would be corrupted.

After a standby or similar mode the **EASYControl** has to be restarted.

1.2 The **EASYBUS**

The **EASYBUS** unit is a digital 'fieldbus', which has been developed for purposes in the measuring and controlling technology.

The **EASYBUS** allows for up to 239 sensor modules to be connected to a single two-wire line for centralised acquisition of measuring data. Regardless as to whether pressure/temperature or other sensors are used, all units are converted to digital signals and transmitted via two-wire lines. Power supply of the sensors is also achieved via the two-wire line.

The centralised acquisition of measuring data is done with the help of a so called 'Busmaster' (PC and converter, EB2000 ...).

The **EASYBUS** unit ensures that long distance transmission (up to 1000m) is carried out without additional measuring fault. Sensor modules may be connected as desired, there is no polarity.

1.3 The RS485-Bus

The RS485-Bus in connection with the Software **EASYControl** supports up to 15 sensor modules of the GIA/GIR-family simultaneously. In comparison to the **EASYBus** some restrictions are given, e.g. no full automatic system initialisation, polarity must be considered.

1.4 GMH 3xxx Measuring Instruments

The Software **EASYControl** is also able to record measuring values from a measuring instrument of the GMH 3xxx-series. The instrument will be connected with the PC by using a GRS3100 interface adapter. If there is more than one measuring range supported, the values are available on different channels. About more information look at the operation manual of the measuring device.

Note: *Not all members of the GMH3xxx handheld series are supported! For example a recording with the GMH31x1, GMH3156 or GMH37xx is not possible.*

Following devices are supported: GMH3110, GMH3150, GMH3160, GMH3180, GMH32xx, GMH33xx, GMH34xx, GMH35xx, GMH36xx, GMH38xx

1.5 The 'EASYControl' Software



An **EASYBus**-Master consists of a PC with **EASYControl** software and a converter connected to a serial interface. An automatic system initialisation, which has to be carried out at the beginning, will result in:

- the creation of an 'ACCESS'-database, which, later on, serves to save all measuring values as well as error and status messages, if any.
- a search for all sensors connected; an entry in the database will be made for each and any one.
- the configuration of each sensor; e.g. identification and calling cycle (measurements per time) have to be set.

If recording of measuring values is started afterwards, the **EASYControl** automatically collects all measuring values to permanently save them in the data base.

Furthermore, the measuring values collected from the individual sensor modules can be viewed and printed in form of a table or in form of a diagram.

It is possible to 'archive', i.e. relocate parts of the database by means of the archiving function. We recommend to archive the data base monthly. This affords two advantages: first, the database cannot become too large, second, the archives created can be saved accordingly (-> disks, streamer).

Archives can be viewed and printed whenever necessary using the **EASYview** software. In addition to this manual you can call up a context help file for each software element using the right-hand mouse button. The software is designed for permanent operation and does not require constant operator monitoring; please also refer to chapter '**What Happens To The Program in Case Of A Current Failure?**'.

1.6 The 'EASYview' Software



First of all **EASYview** is used for viewing the archives created by means of **EASYControl**. Operation of the software is similar to the operation of **EASYControl**.

It contains all the essential functions for viewing (diagram, table) or printing the data. This means that data cannot only be viewed and evaluated on the **EASYBus**-Master but also on other computers.

2 Shortform Operating Manual

2.1 First Program Start

When starting the software on your system for the first time, you have to make some settings:

necessary settings	please refer to chapter
selection of language	
setting of the level converter and interface used	2.2 Setting of Interface Parameters
selection of options	2.3 Options
initialisation of sensor modules	2.4 System Initialisation

2.2 Setting of Interface Parameters

After first commissioning your program the interface parameters of your software need to be checked. To do so please select item 'Interface' of the 'Configuration' menu:

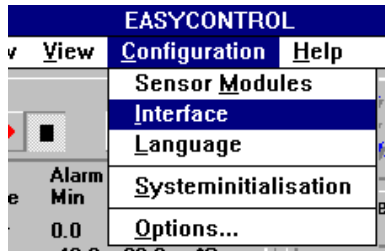


Figure 2.2-1: Menue: Configuration

The window interface configuration will appear:

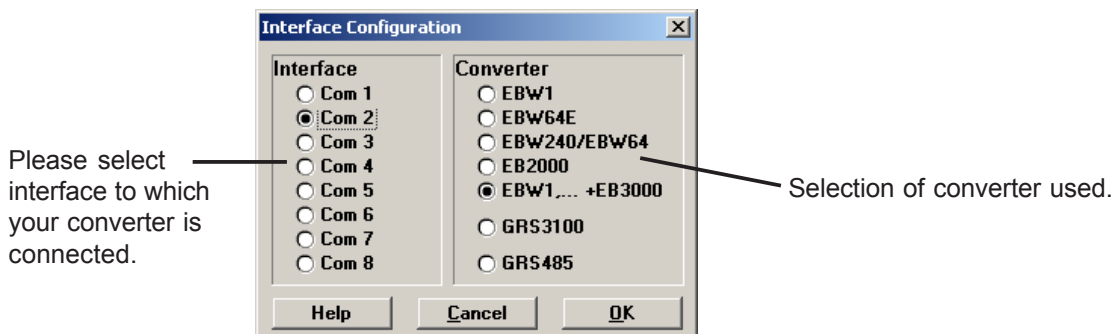


Figure 2.2-2: Window: 'Interface Configuration'

2.3 Options

Call up via 'Options' from menue 'Configuration'. The following window will be displayed:

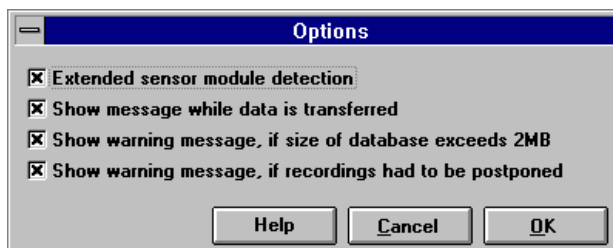


Fig. 2.3-1: Window: Options

Extended sensor module detection (not selectable by EB3000)

Only available when using **EASYbus** sensor modules.

The Bus automatically detects all sensor modules which have been newly connected, if they are assigned to the bus address 0 (manufacturer's setting for new sensor modules). The extended sensor module detection allows for detection of other sensors with addresses that have not yet been assigned by the program. Depending on the number of bus addresses that have been assigned the respective sensor will be detected within half an hour. We recommend to deactivate this option during normal mode to save computer time.

Show message while data is transferred

If this option is active a message will be displayed each time data are read from the **EASYbus**. In case you intend to continue working with another software (in the background) on your computer during recording, we recommend to deactivate this option.

Show message, if size of database exceeds 2MB

A large data base may slow down or overload your computer. In that case a part of it should be archived. (Please refer to 3.6 Archiving Data)

If this option is active, a message will be displayed as soon as the database is larger than 2MB.

Show message, after acquisitions had to be postponed

If too many modules have to be read at once, some of them will be postponed to the next cycle. In this case, if this option is active, message will be displayed.

If it isn't possible for the system to take a reading of the module within the next interval, an error message will be shown and stored in the database, regardless to the setting of this option.

2.4 System Initialisation

Automatic system initialisation is started by choosing the item 'Systeminitialisation' from the menu configuration.

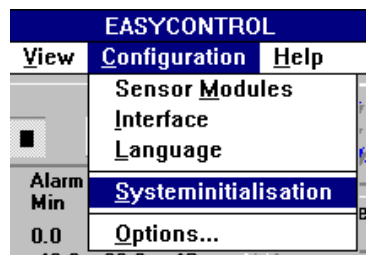


Figure 2.4-1: Item 'Systeminitialisation'

First of all state name and path for your database. Make sure that there is enough free space on the drive chosen.

After an informational message **EASYbus**-system will be initialised automatically. Measuring instruments of the GMH 3xxx-series will also be initialised automatically.

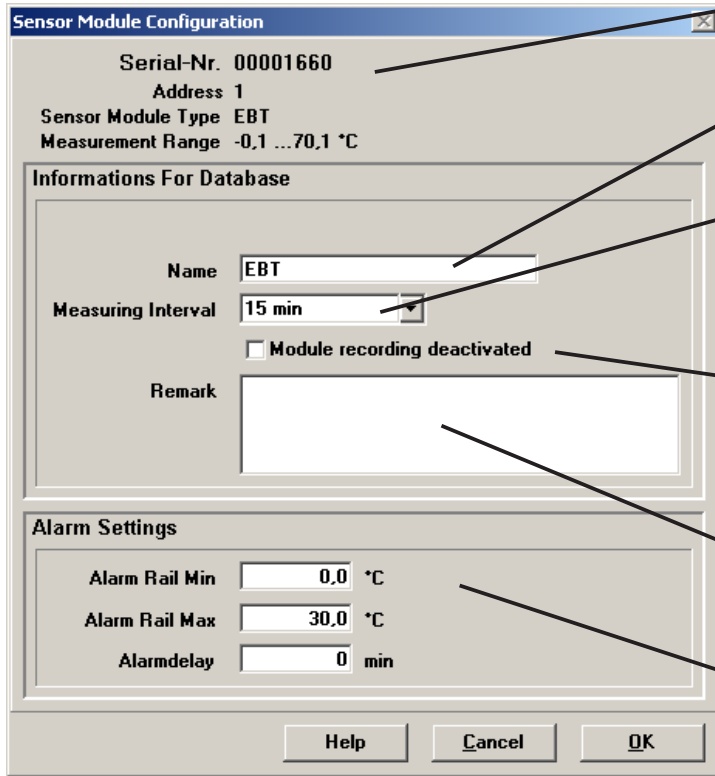
If a GRS485 system is used all addresses of the modules need to be set correctly before performing a system initialisation! Allowed addresses: 1, 2, ...15, always starting with address 1, in rising order. Please also refer to the manuals of the modules.

When using **EASYbus**-systems combined with EB3000, it is necessary to assign busaddresses in increasing order, too. We strongly recommend to use the software EASYBUS-Konfigurator, included on the EASYControl data carrier or available via internet.

After initialisation has been completed you may enter a comment (of up to 200 characters) for the database which will be visible on all print-outs.

Then all sensor modules detected have to be set according to your requirements; to do so use the sensor module configuration window is appearing here:

2.5 Sensor Module Configuration



- Information about the sensor module.
- Identification field: enter name here. 5 to 20 characters will be accepted.
- The time interval entered here is used to request measuring values from the sensor module. Minimum time: 10 seconds
- Temporary deactivation of this module's recording (e.g. if module has to be disconnected temporarily for maintenance).
- Remark: individual informations about the sensor module. Up to 200 characters are allowed.
- Enter alarm settings for sensor module here.

Figure 2.5-1: Window: 'Sensor Module Configuration'

2.6 EASYControl User Interface

2.6.1 Elements of the Interface

- 1 Menu bar
- 2 List of sensor modules
- 3 Tool-buttons
- 4 Error view

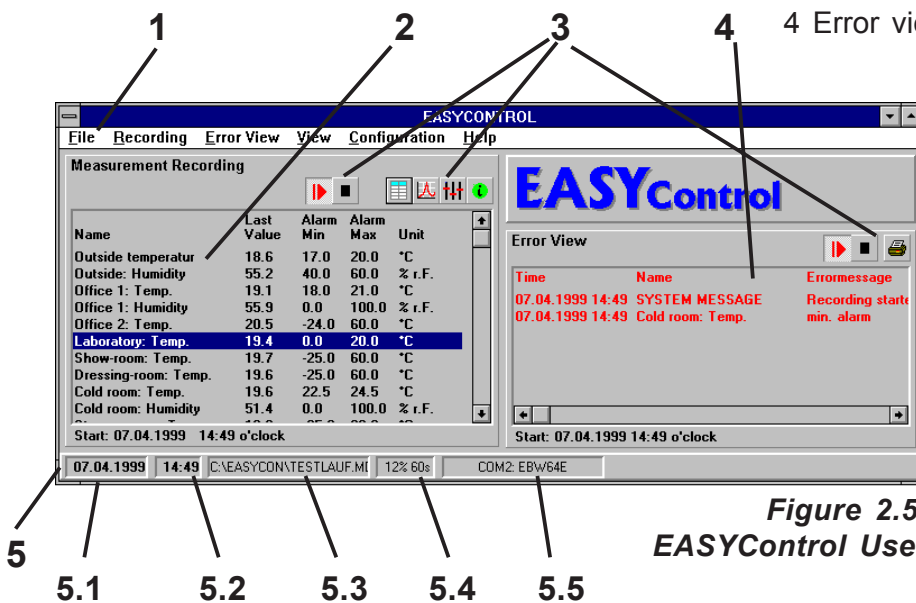


Figure 2.5-1: EASYControl User Interface

- 5 Status line
 - 5.1 Date
 - 5.2 Time
 - 5.3 Path of database
 - 5.4 System load [%], smallest used timebase
 - 5.5 Interface settings

2.6.2 Sensor Module List Functions

Changing to measurements diagram or table

By *double clicking on the left-hand mouse button* the measuring value view will appear on the screen.

Help or sensor module info

By means of the *right-hand mouse button* you can either call up the context help for the sensor module list or call all other sensor module functions.

Changing sensor module arrangement

You may 'drag' sensor modules to different locations in the sensor module list by means of the *left-hand mouse button*: click on the sensor module to be moved with the left-hand mouse button and drag sensor module to the position desired, release button then.

Tool-buttons

With the tools buttons You comfortably can control the most important functions of the sensor module list:

- starting / stopping of recording
- show data table
- show data diagram
- configure sensor module
- show sensor module info

2.7 Start/Stop Recording

You may start the recording of the software after systeminitialisation has been completed by activating 'Start' in the 'Recording' menu. Stop recording by means of 'Stop'.

2.8 Sensor Modules Summary

Click on 'Sensor Modules' in the 'Configuration' menu to enter the sensor modules summary. Here all sensor modules with their most important data are listed.

Sensor Modules Summary							Sensor Module
Serial-Nr.	Name	Measuring Interval	Alarm Min	Alarm Max	Unit	Alarmdelay [min]	
00000010	Outside temperature	15	15	30	°C	0	Change
02100022	Outside Humidity	8	0	100	% r.F.	0	Delete
00000012	Office 1: Temp.	5	-0,1	70,1	°C	0	
02100010	Office 1: Hum.	10	0	100	% r.F.	0	
00200154	Show-room: Temp.	6	-25	60	°C	0	
02100011	Show-room: Hum.	6	30	70	% r.F.	0	
00000013	Dressing-room: Temp.	12	0	70	°C	0	Inspect
02100012	Dressing-room: Hum.	24	0	100	% r.F.	0	Delete
00000011	Cold room: Temp.	8	5	25	°C	0	
02100023	Cold room: Hum.	15	0	100	% r.F.	0	

Help
Exit

Figure 2.8-1: Window: Sensor Modules Summary

Use this program item to change sensor modules settings, to delete inactive sensor modules and to view or delete measuring values.

3 Other Functions

3.1 Data view: Measurements Table

The table of measuring values shows measuring data that have been recorded for the sensor module selected in form of a table. This page is activated by selecting the menu item 'Table' from the menu 'View'. When double clicking on a sensor module in the list with the left-hand mouse button, the table will be loaded.

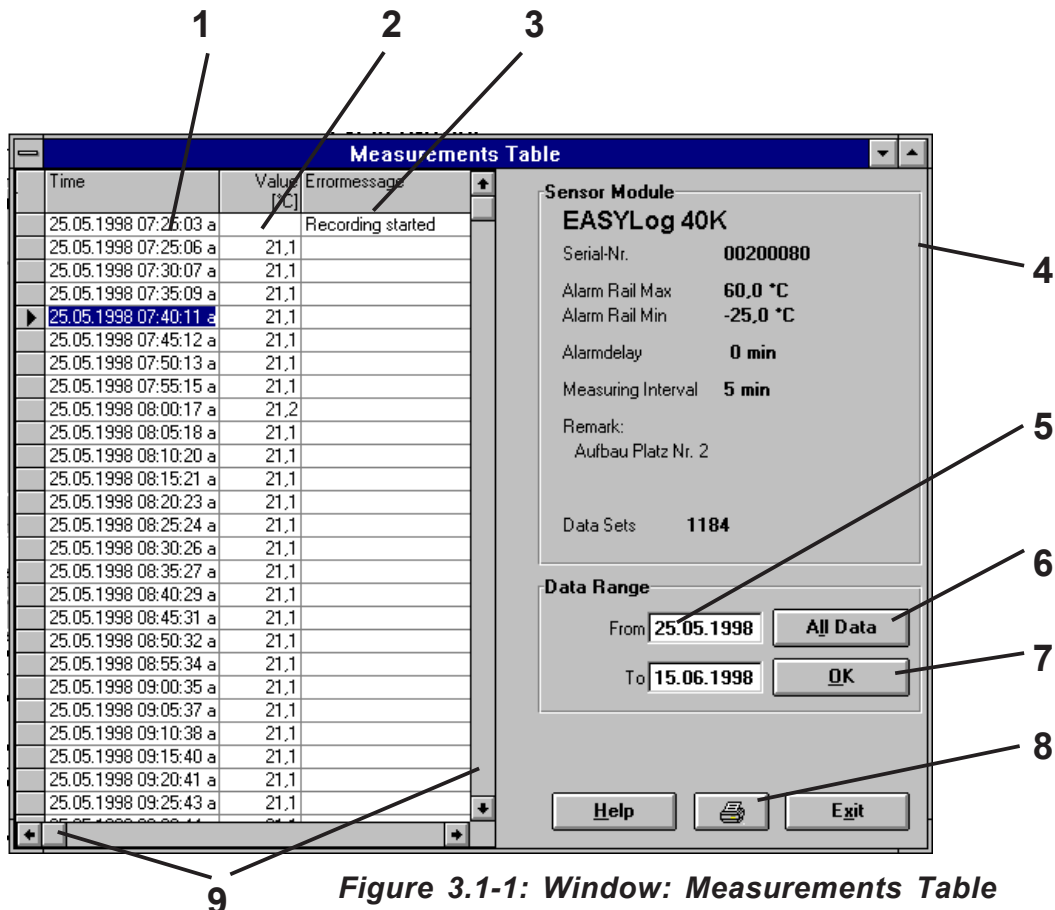


Figure 3.1-1: Window: Measurements Table

- 1 Time at which measurement has been taken
- 2 Measuring value
- 3 Status message (e.g. alarm)
- 4 Sensor module informations
- 5 Input fields to limit data range displayed in the table
- 6 Display all data
- 7 Input acknowledgement
- 8 Print out
- 9 Scrollbar function

Limiting data range displayed in the table

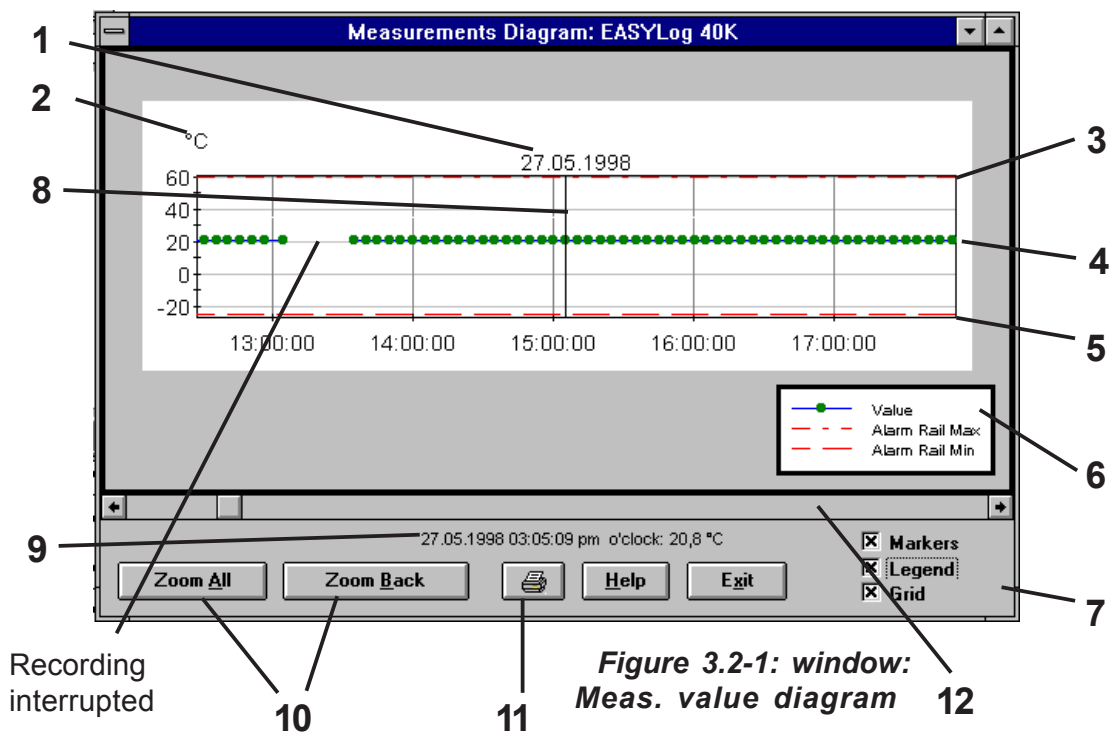
To display / print a certain range of data in the table, please enter the dates desired in the input fields (5). Acknowledge input by (7) and the range set will be displayed.

Print out:

The print out shows the range set in the input fields (5).

3.2 Data View: Measuring Value Diagram

The measuring value diagram depicts all data recorded by the sensor module selected in form of a diagram. By means of the zooming function (left-hand mouse button) the section viewed may be changed. Call up this page by selecting the menu item 'Diagram' from the menue 'View'. When double clicking on a sensor in the list with the left-hand mouse button, the diagram will be loaded.



Recording interrupted

1 period of time displayed
2 unit
3 max. alarm limit
4 meas. value diagram

5 min. alarm limit
6 legend
7 special functions
8 cursor

9 cursor data
10 zooming buttons
11 print-out
12 scroll function

Cursor function: By moving the mouse pointer over the diagram the vertical cursor line will automatically jump to the nearest measuring point, whose exact data will be displayed beneath the diagram.

Zooming function: To zoom a certain section move the mouse cursor to the upper left-hand corner of the section to be viewed, press left-hand mouse button and move mouse to the bottom right-hand corner of this section. An inversion of the section to be zoomed will be shown.

To undo this process use the zooming buttons (10). Use scroll function (12) to move the zoomed diagram.

Print out: The print out shows the area chosen on the screen, e.g. by means of the zooming function. We recommend a print out in landscape format. In case you run your graphics card with a colour depth of >8 bit (>256 colours) the diagram may not be printed. In this case, please reduce your colour depth in the setup to 8 bit.

3.3 What Happens To The Program in Case Of A Current Failure?

EASYControl measuring data acquisition is designed for permanent operation and does not require constant operator monitoring.

To guarantee a problem-free software re-start of the computer after power failure without the operator's help, we recommend the following settings for your system:

1. Make sure that 'Windows' is always started automatically after your computer has been switched on. If you use Windows 3.1 an entry in the 'Autoexec.bat' file will be necessary.
If your Windows 3.1 program does not start automatically, please open this file with the texteditor (e.g. 'edit' in Dos-operation or 'Notepad' in Windows-mode) and add the call up 'win' at the end of the file.
2. Add **EASYControl** to your Windows-program group 'Autostart'. To do so open both the autostart and the **EASYControl**-program group. Draw a copy of the **EASYControl**-symbol to your autostart-program group, e.g. by placing the mouse pointer on the **EASYControl**-symbol, press down the left-hand mouse button and the Ctrl key simultaneously and draw the symbol to the program group autostart; then release the mouse button. Make sure that both program groups contain the '**EASYControl**' symbol now.

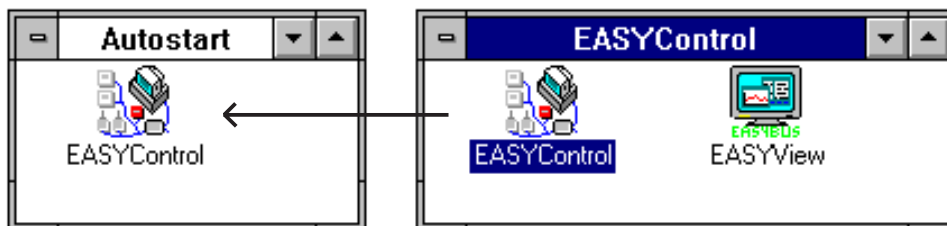


Fig. 3.3-1: Creating an entry in the autostart program group Windows 3.1

This autostart entry ensures automatic start-up of **EASYControl** after each restart of the computer, i.e. an ongoing recording will be continued automatically after a power failure so that only the data which should have been recorded during the power failure will be lost.

Please note: Windows operating systems with user announcement will only then start programs of the group autostart, when a user is logged in. In that case **EASYControl** is not able to start after a failure without assistance.

3.4 Database Info

Call up by means of 'Database info' from the menu 'View' or automatically after each system initialisation.

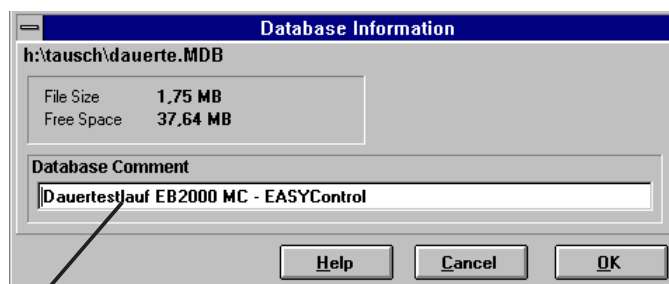


Fig. 3.4-1: Window: Data base info

You may enter and/or edit a comment of up to 200 characters in the database, which will be found on any print out.

3.5 Sensor Module Information

Call up from sensor module list by pressing the right-hand mouse button or by marking a sensor module and selecting 'Sensor-Module-Info' from menue 'View'.

Shows main information and parameters of sensor module.

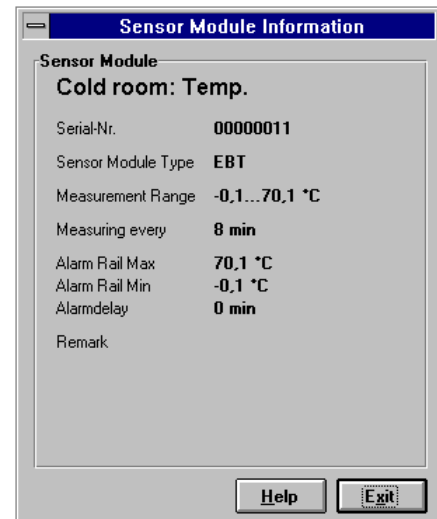


Fig. 3.5-1: Window: Sensor Module Info

3.6 Archiving Data

To activate the archiving function click on 'Archive' in the menue 'File'.

This file is mainly used to relocate data from the database to 'Archives'. Archives may then be saved on floppy disks, thus preventing involuntary data loss.



Figure 2.8-1: window: Archive data

We recommend archiving at regular intervals. e.g. monthly.

In addition to a high data safety this affords the advantage of small databases, i.e. the processing speed when viewing the archives and the compact database is much higher.

Use the '**EASYview**' software included in this package to view and print the archives (please also refer to: **4 EASYview**)

Date up to which data are to be archived. All data later than this one will remain in the database.

4 Alarm Switching Funktion For EBB-Out Modules

If one or more EBB-Out modules are connected to the bus they behave like following: **EASYControl** scans all connected sensor modules for all possible alarm conditions.

- If any sensor module has an error during the scan, the relays 1 of the EBB-Out module(s) switches off.
- If any sensor module has an min alarm during the scan the relays 2 of the EBB-Out module(s) switches off.
- If any sensor module has an max alarm during the scan the relays 3 of the EBB-Out module(s) switches off.

Relais 4 is currently not supported (reserved)

If more than one EBB_Out modules are connected, they behave identically.

The reaction time of the relays is given by the cycle time of the scanned sensor modules (min. 10s)

The state will be recorded with the cycle chosen at the sensor module configuration (one cycle delay)

5 EASYview

EASYview is an archive and/or database browser supporting all main printing and viewing functions of **EASYControl**. Operation is also similar; however, please note the following exceptions:

- You can not access the bus (reading of measuring values ...)
- Sensor modules configuration cannot be called up.
- Re-arrangement of sensors in the sensor list is not possible by dragging as can be done with **EASYControl**

Additionally an export function is integrated (Menü FileExport)

With this function data can be exported to a text (ASCII) file. Alter the settings of decimal point, separator and end of line to be able to import the data correctly to Your other application, if necessary.

After starting the program an 'empty' **EASYview** window will be displayed.

Select 'Open' from the menue 'File' to open an archive or current database.

After a a certain loading time the sensor list and error display will appear, similar to **EASYControl** operation.

Contrary to the **EASYControl** software, **EASYview** principally displays all error messages recorded in the archive.

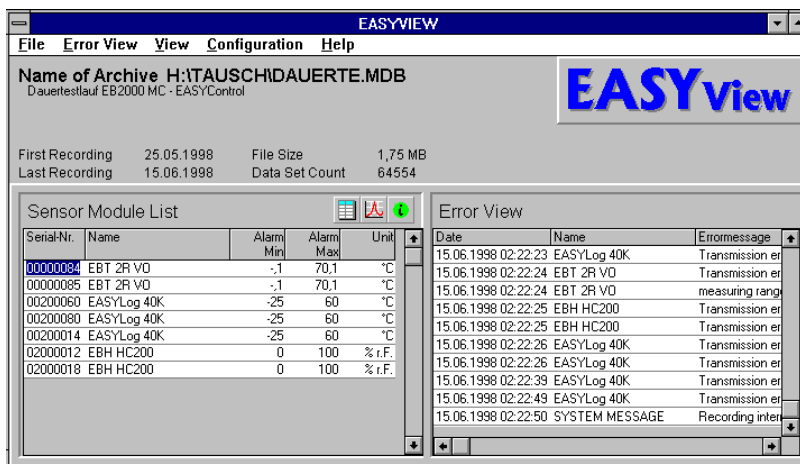


Fig. 4.1-1: EASYView main window

APPENDIX A: EASYControl Database

General

EASYControl creates a database in the common by used 'ACCESS'-database format. This database format can be processed by lots of other programs giving you the possibility to process your data with another software.

Structure

Principally a database is made up of one or several tables, divided into one or several columns. (structures of archives and the current database are always identical).

Table	Column	Datatype
Sensormodules	FabNo	LONG
	FabNoHex	TEXT[8]
	Type	TEXT[20]
	Version	TEXT[8]
	Address	BYTE
	Listposition	INTEGER
	Name	TEXT[20]
	Lastvalue	SINGLE
	Remark	TEXT[200]
	Range Min	SINGLE
	Range Max	SINGLE
	Unit	TEXT[15]
	Decimal Point	INTEGER
	Alarm Min	SINGLE
	Alarm Max	SINGLE
	Alarmdelay	INTEGER
	Pollinterval	INTEGER
Min/Max Alarm Allowed	BOOLEAN	
Alarmdelay Allowed	BOOLEAN	
SensorData	FabN	LONG
	Date	DATE
	Value	SINGLE
Errors	FabNo	LONG
	Date	DATE
	ErrorCode	INTEGER
	PrioCode	INTEGER
Changes	FabNo	LONG
	Date	DATE
	Old Pollinterval	INTEGER
	Old Alarm Min	SINGLE
	Old Alarm Max	SINGLE
	Old Alarmdelay	INTEGER
DB-Info	Remark	TEXT[200]
	FirstErrorPrint	DATE
	LastErrorPrint	DATE
ErrorDescriptions	ErrorCode	INTEGER
	PrioCode	INTEGER
	Description German	TEXT[200]
	Description English	TEXT[200]

EASYControl database

