

# **Read-out Software „ MC - READ “9.1701.00.015**

Version V 2.01

State 08/98

for Read-out unit for Memory-Card 9.1701.10.000

Datalogger: DL 15, TDL 14, DL 1/N

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## 1 INTRODUCTION

With the Read out program "MC\_READ" you can control the Memory Card Reader (9.1701.10.000) and convert the data on the Memory Card into the so-called "UNISOFT"-format. This format corresponds to the description given in the documentation of the data logger and in the *Annex A* on page 21.

All data are put out as tables in ASCII files. You are thus able to see, edit, manipulate and print out your data records with your word processing program. You can also edit your ASCII files with other standard software, e.g. table calculation, data bases etc.

The data on the Memory Cards can be written with the Datalogger DL 15 or the Datalogger DL 1/N. The DL 15 writes both mean values and extreme values on the Memory Card, the DL 1/N writes only precipitation values (no extreme values). "MC\_READ" saves mean values and extreme values continuously in different files. There is a difference in the format of the date in the software versions of the dataloggers. The software versions V 1.09 of the DL 15 (and V 1.03 of the DL 1/N) saves the data records with the date format "DD.MM." (without the year). The software version V 2.00 and higher of the DL 15 (and V 1.10 and higher of the DL 1/N) saves the data records with the date format "DD.MM.YY" (with the year). "MC\_READ" retransmits the date format of the Datalogger to the ASCII files.

"MC\_READ" is controlled via menus correspondent to the "SAA" standard. You can use the cursor keys , hotkeys (key combinations) and a mouse, if installed.

To use "MC\_READ" you need:

- IBM compatible PC XT/AT
- 256 KB of free memory
- MS-DOS Version 3.0 or higher
- 1 free parallel port (Usually used by the printer)
- Memory Card Reader with cable

The software supplied consists of two files:

- MC\_READ.EXE      Read Out Program
- MC\_READ.CFG      Configuration File: Name *must not* be changed!

The configuration file "MC\_READ.CFG" contains crucial parameters for the successful operation of the program and is a text file. (see section 4.3.9 Save on page 19)

## **2 INSTALLATION**

To install the program you should copy the files on the installation diskette into a directory on your hard disk or diskette. You should keep the original diskettes in a safe place.

It may be useful to create special directories for the data files, e.g. to separate mean value files from extreme value files or to distinguish data from different data loggers.

Now you can start the program.

As a next step, you should set the port for the data reader (Menu "Options/Port...", see section 4.3.3 *Port...* on page 17) and, if you wish, the directories for data files (Menu "Options/Directory Mean..." or "Options/Directory Extreme...", see section 4.3.1 *Directory Mean...* on page 16 or 4.3.2 *Directory Extreme...* on page 17).

Don't forget to save the changes in the configuration file (Menu "Options/Save", see section 4.3.9 *Save* on page 19)!

## **3 GENERAL INFORMATION ON THE OPERATION (SAA-STANDARD)**

This program can be operated by using the SAA Standard (System Application Architecture) from IBM. Because of the many common features with other standard programs, operation is considerably simplified.

Menu lines, pull-down menus and dialogue windows are some of the common operation features. The keyboard or the mouse, if installed, is used to control the program. The function key <F1> is reserved for the context-sensitive help functions. In this section 3 of the documentation, the operation according to the SAA standard is explained; if you are experienced with this, you can omit reading section 3.

### **3.1 MENU MANAGER**

The menu manager is designed as a central control unit for programs which use menu techniques as an interface between software and user. The interface defines exactly how the program has to react to entries of the user.

#### **3.1.1 THE USER SURFACE**

The SAA standard divides the screen into three sections:

- the action bar
- the panel body
- the function key area

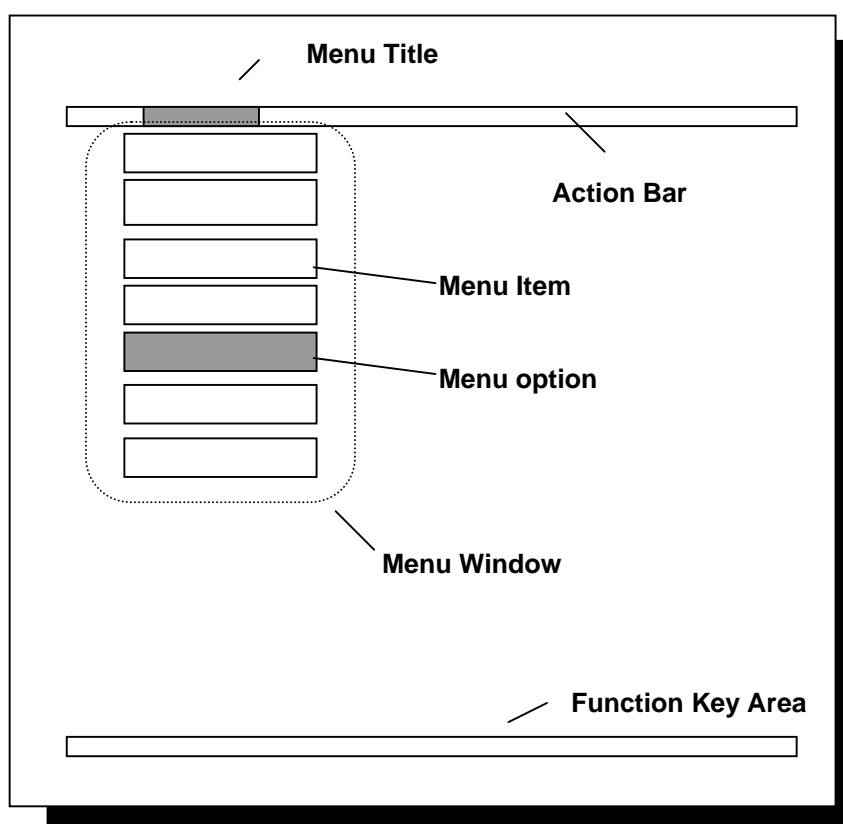
The action bar is always the uppermost line (line 0) of the screen in sign-oriented programs like MC\_READ and contains a group of selectable items, which are identical to the titles of the menu windows.

The operation area of the program (panel body) is situated under the action bar and consists of 23 of the 25 normal lines on the screen. Line 24 contains information about the operation of the program or short help texts for the different menu options.

### 3.1.2 THE ELEMENTS OF A MENU

A menu is a group of menu windows which are accessible via an action bar. The following graphic illustrates this correspondence.

Every menu has an action bar which contains the titles of the different menu windows. The action bar remains visible during the entire operation because the user uses it as an interface between him/her and the program.



The action bar is placed in the first line of the screen (line 0). Thus its width is independent of the number of menu titles. Every menu title contains a mnemonic (Hotkey), with which the corresponding menu window (dialogue window) can be opened. This hotkey is displayed differently, depending on the colour palette and the graphics adapter.

The SAA standard has a double line as a frame for menu windows in applications running in the text mode. The default setting for this program is a single line as a frame, but you can change the type of the frame according to your wishes. Between the left edge of the frame and the first option, there are two blanks. This space is used for check marks ("√") in front of the options which inform the user whether a specific option is activated at the moment or not.

For each menu option there is a hotkey which is marked off optically. With the hotkey, you can activate an option directly if the menu window is visible on the screen. Options which are followed by an dialogue window are marked by three full stops directly after the text of the menu options.

### **3.1.3 THE SELECTION IN THE ACTION BAR AND IN THE MENU WINDOWS**

Besides the optical presentation, the SAA standard also defines the process, with which the user makes his selection in the action bar and in the menu windows. When selecting any menu items you can use either the keyboard or the mouse.

#### **Using the keyboard**

You can activate the action bar either by using the <F10> key or the left <Alt> key. If the user has pressed one of these keys, the first title in the action bar is specially marked by a selection cursor. At this time, no menu window will appear.

After having activated the action bar, the user always has the possibility to abort the selection by pressing keys <F10>, <Esc> or the left <Alt> key. With keys ← (<Cursor left>) and → (<Cursor right>) you can move the selection cursor within the action bar. Here, the wrap-around technique is used. This means that you can directly reach the farthest right menu title from the farthest left by pressing ← and vice versa. In this stage of the selection process, no menu windows will be displayed.

There are a number of different ways to activate a menu window:

- You can enter the - in the menu title especially marked - hotkey. The selection cursor in the action bar disappears, the menu window is displayed and the first option of the menu window is marked with the selection cursor.
- You can press the <↓> key (Cursor down) or the <↵> key (Return) if the selection cursor is on the desired title. The selection cursor in the action bar disappears, the menu window is displayed and the first option of the menu window is marked with the selection cursor.
- You can press the <↑> key if the selection cursor is on the desired title. The selection cursor in the action bar disappears, the menu window is displayed and the first option of the menu window is marked with the selection cursor.

Besides the keys which abort the selection, you can choose among the following keys after a menu window has been activated:

- You can enter the hotkey of one of the menu options. In this way, the desired selection is made, independent of the position of the selection cursor. When selecting an inactive option, a short acoustic warning will sound, but no further actions will be carried out.
- The keys <↑> and <↓> move the selection cursor in the desired direction within the menu window. If the selection cursor is positioned on the last option of a menu window, and the key <↓> is pressed, the selection cursor will move to the first option of the menu window. If the selection cursor is situated on the first option, it can be moved to the last option via the key <↑> (wrap-around).

- With the keys <←> and <→> the menu window to the left or to the right of the currently activated menu window is displayed. Independent of the position of the selection cursor in the old menu window, the first option in the new menu window will always be marked. A wrap-around takes place, too.
- By pressing the <↵> key, you activate the option, on which the selection cursor is currently placed. If the option is inactive, a short acoustic warning sounds.

### **Using the Mouse**

When you use the mouse, there are two different techniques to be noted: "Press and Hold" and "Press and Release". Both techniques have a common method of activating a menu window: The user has to press the left mouse button onto one of the titles in the action bar for the corresponding menu window to appear. When the "Press and Hold" technique is used, the user keeps the left mouse button pressed until the mouse cursor is situated on the desired option. Select your option by releasing the mouse button on this option.

With "Press and Release" the user has to move the mouse cursor onto the desired title in the action bar and then click on the title (by briefly pressing the left mouse button). The corresponding menu window appears and the selection cursor marks the first option of the menu window. Now the cursor can be moved onto the desired option. The option is selected by briefly pressing the left mouse button.

With both techniques you can change to another menu window by moving the mouse cursor onto another title in the action bar. If you use the "Press and Release" technique, the left mouse button has to be pressed and then released in addition to the technique named above.

You can abort the selection in the "Press and Hold" system by releasing the mouse button not on a menu title or a menu option.

## **3.2 DIALOGUE WINDOWS**

Dialogue windows are screen windows which are used by a program to receive information or data necessary for the control of different program functions from the user.

Dialogue windows consist of several components. These elements appear once or more times in a dialogue window. The exact requirements can be determined from the purpose of the dialogue window in the program context.

These are the possible components:

- Push button  
The push buttons are situated in the lower part of the dialogue window and explain what happens if they are selected and with which key they can be activated.
- Radio button  
The radio buttons indicate that there can be only one option selected out of a group of options.

- Check box  
Check boxes indicate that more than one option can be selected out of a group of options.
- List box  
List boxes are used if you wish to save a file. Files whose names correspond to a pre-set search mask are listed in a list. List boxes have a selection cursor (bar) with which the user can make his decision.
- Edit control  
You can enter a text into an edit control window. If an edit control is active, i.e. user inputs are received, a cursor will appear within the window. If the entered text is longer than the width of the edit control, the content of the window is scrolled.

The following keys are used for the different functions:

- |               |  |
|---------------|--|
| <Tab>         | Selects the next element in the dialogue window from the left to the right and from up to down.          |
| <Shift-Tab>   | Selects the next dialogue element in the dialogue window from the right to the left and from down to up. |
| <↵ > (Return) | Transmits the information entered by the user to the program.  |
| <Esc>         | Ends the dialogue window interaction. All data entered by the user are deleted.                          |
| <↑>, <↓>      | Moves the selection within a group of radio buttons into the desired direction.                          |
| <Space>       | Changes the status of an option window between active and inactive                                       |
| <F1>          | loads the help function for the operation and the function of the currently active dialogue window.      |

If a mouse is connected to your system you can use it as an input tool.

- Buttons are activated by moving the mouse cursor onto the desired button and then pressing the left mouse button.
- The status of a check box is turned on /off by clicking onto the check box with the left mouse button.
- Moving to the desired box and then pressing the left mouse button moves the selection in a group of radio boxes.
- You can move onto a desired entry within directory windows by clicking the entry with the left mouse button. The entry can be selected by double-clicking it.



## 4 MENU REFERENCE

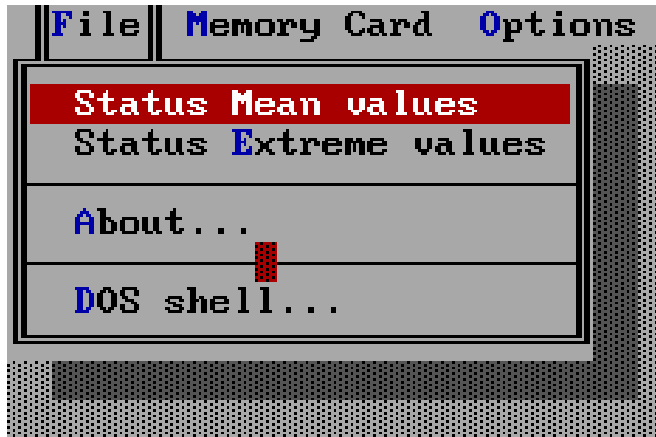
This chapter will cover all of the program's menu commands. The titles of the menu windows are shown in the following *action bar*:



The following hotkeys are available:

<F3>	quits the program
<F9>	information on hotkeys
<Alt-F1>	help index

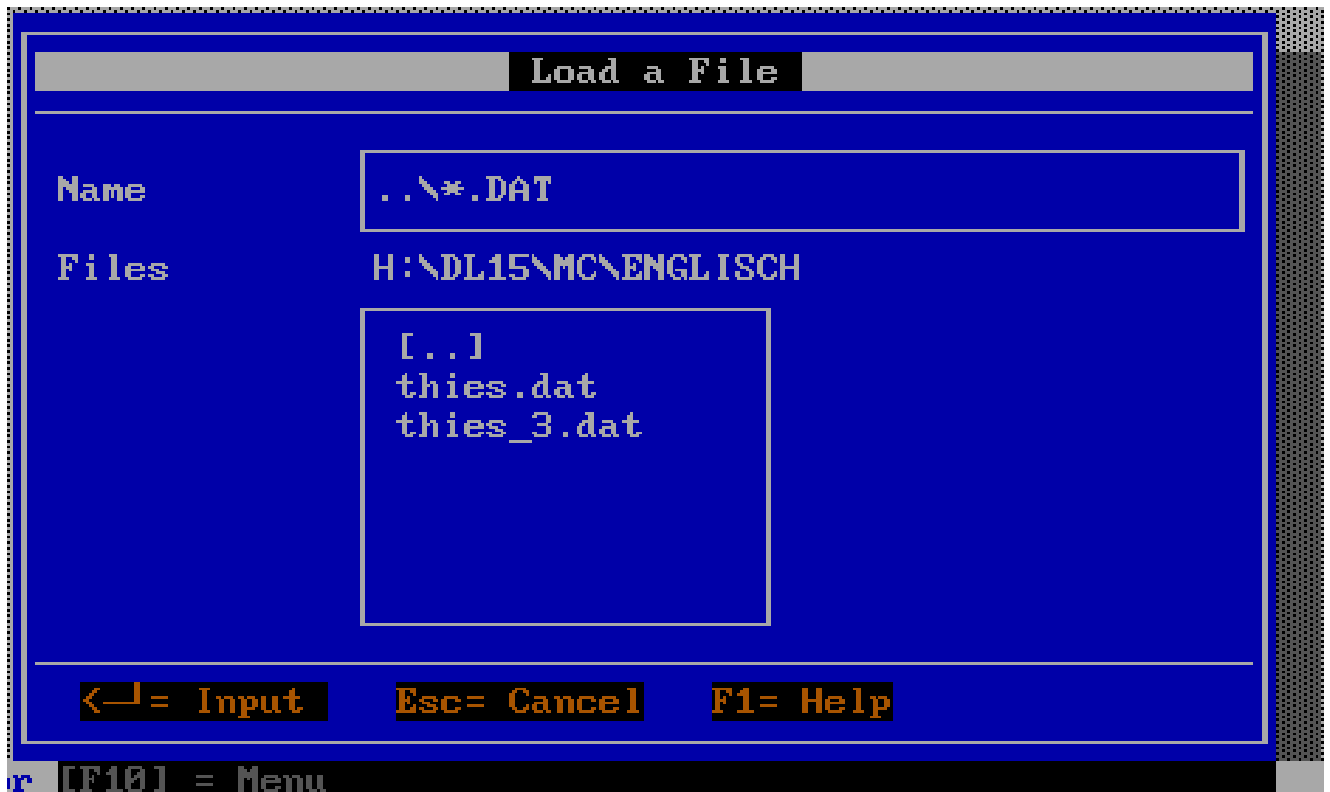
### 4.1 FILE MENU



In this menu you can request information on existing data files, have the version number displayed or temporarily leave the program to enter a DOS command.

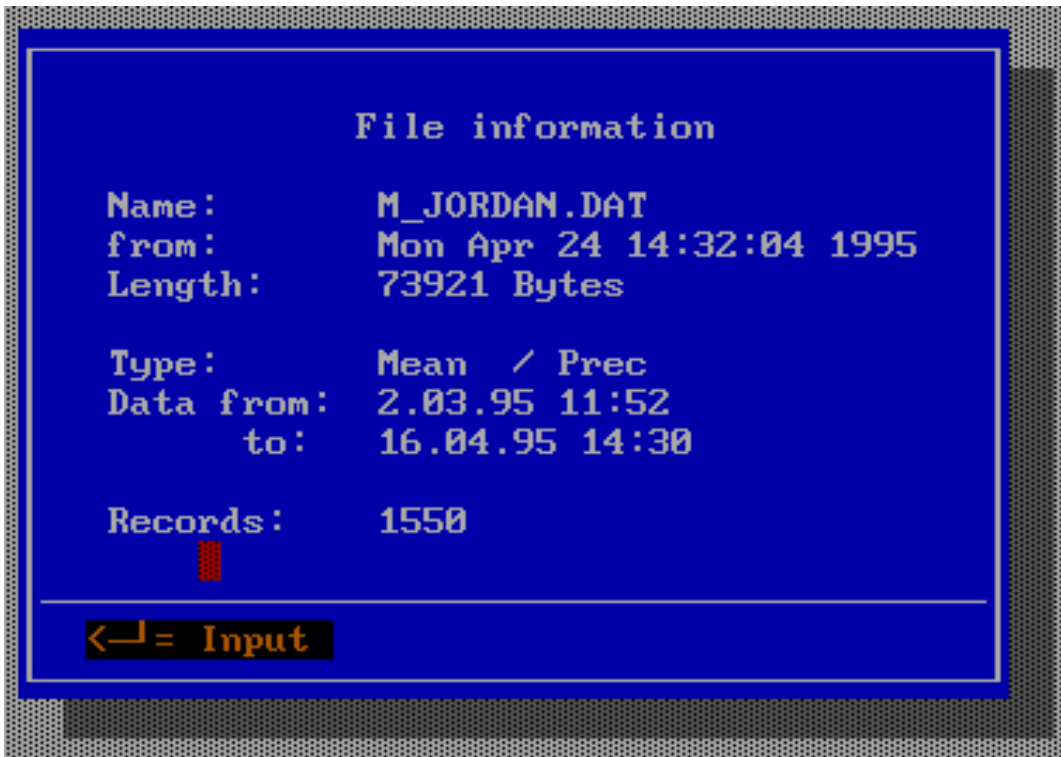
#### 4.1.1 STATUS MEAN VALUES

"File / Status Mean Values" displays information on a data file. First, a dialogue box is displayed that allows you to select an existing file.



The search mask is "\*.DAT", meaning that all files with a "DAT" extension are displayed. The default path is the one selected under "Options / Directory Mean..." (see section 4.3.1 *Directory Mean...* on page 16). You may also change these defaults.

The window opened upon successful selection of a file is for display only and cannot be changed:



The first three lines display information also available with the DOS command "DIR":

Item	Explanation:	in the example:
Name:	name of the selected file	M_JORDAN.DAT
from:	last time file was changed	Monday, April 24, 1995   2:32:04 pm
Length:	length of file in bytes.	73921

Three question marks will appear for the following items if the program is unable to determine the information:

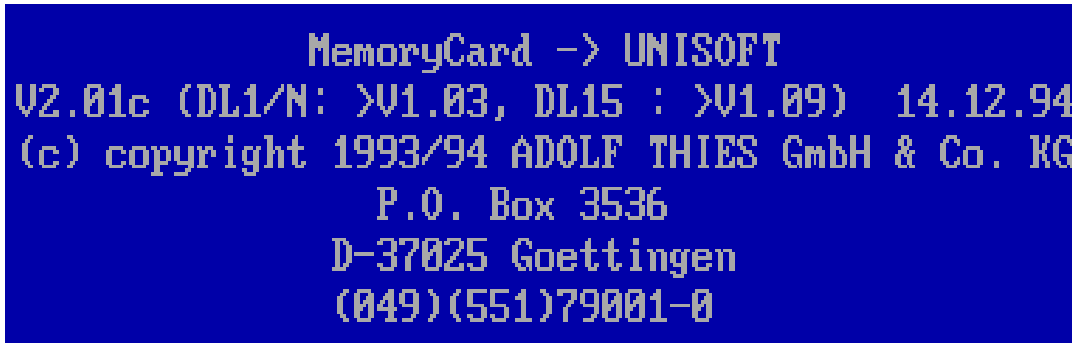
Item	Explanation:	in the example:
Type: Mean/Prec	mean values (DL15)	mean values
Mean/Prec	precipitation values (DL1/N)	
Extreme	extreme values (DL15)	
Data from:	date and time of the first data record	March 2, 1995   11:52 am
to:	date and time of the last data record	April 16, 1995   2:50 pm
Records:	number of records	1550

### 4.1.2 STATUS EXTREME VALUES

This command corresponds exactly to "**File / Status Mean Values**" (see section 4.1.1 *Status Mean Values* on page 9). The only difference is the default path which is determined by the command "**Options / Directory Extreme...**" (see section 4.3.2 *Directory Extreme...* on page 17).

### 4.1.3 ABOUT...

Opens a dialogue window that displays this program's copyright and version information:

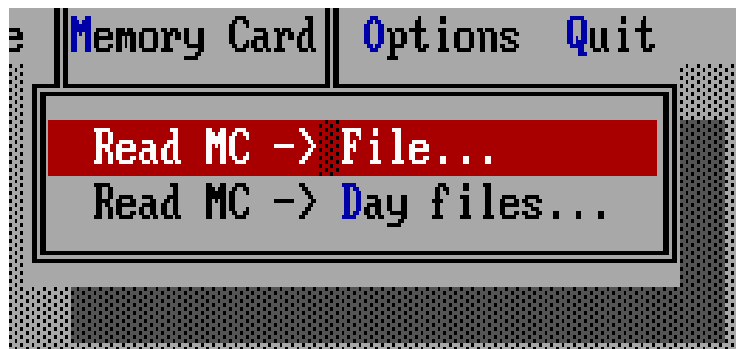


```
MemoryCard -> UNISOFT
V2.01c (DL1/N: >V1.03, DL15 : >V1.09) 14.12.94
(c) copyright 1993/94 ADOLF THIES GmbH & Co. KG
      P.O. Box 3536
      D-37025 Goettingen
      (049)(551)79001-0
```

### 4.1.4 DOS SHELL

With this option you can temporarily exit the program. You can enter DOS commands or load other programs. You can return to the reading program by typing "EXIT".

## 4.2 MEMORY CARD MENU

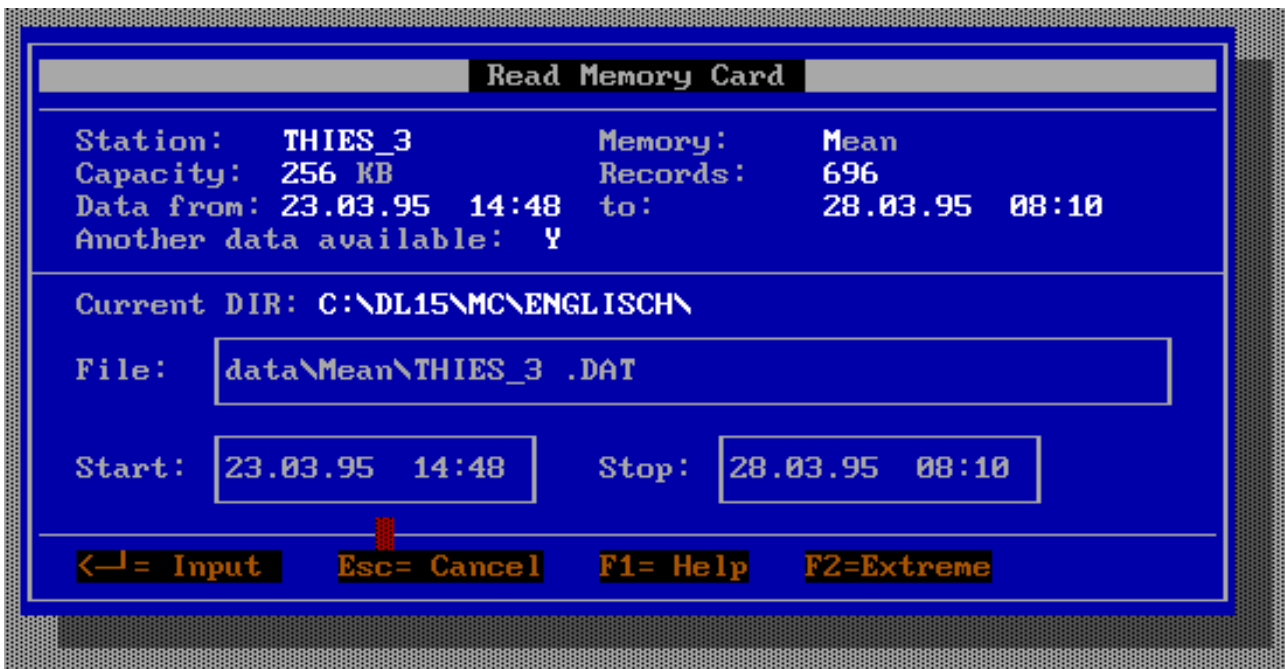


In this menu you can read data from Memory Cards (short: MC) and save them in files.

After choosing "**Memory Card / Read MC → File...**" or "**Memory Card / Read MC → Day file...**" a window requests you to insert a Memory Card into the Memory Card Reader connected to your PC. In case of an error a message is displayed upon pressing <↵>.

there are several possible reasons (see table on page 13).

After successful communication with the Memory Card Reader the following dialogue window appears:



The upper part of the window displays information about the inserted Memory Card:

Item	Explanation:	in the example:
Station:	Station name of the data logger	THIES_3
Memory:	Type of records: mean precipitation extreme	Mean values
Capacity:	Size of Memory Card	256 KB
Records:	Number of total data records	696
Data from:	Date and time of the first record	March 23, 1995   2:48 pm
to:	Date and time of the last record	March 28, 1995   8:10 am
Another data available:	"Y" or "N" says if the Memory Card contains another type of values	Memory Card contains extreme values

The entries in the lower part of the window can be edited:

Item	Explanation:	in the example:
Current DIR:	Displays the current directory (in most cases the directory that contains the reading program)	C:\DL15\MC\ENGLISCH\
File:	Allows entry of a filename and, if desired, a path specification. Entry is only possible for " <b>Memory Card / Read MC → File...</b> ". The filenames for day files are specified by the program!	data\Mean\THIES_3.DAT
Start:	Allows entry of starting date and time	March 23, 1995   2:48 pm

Item	Explanation:	in the example:
	for the requested data Entry is only possible for " <b>Memory Card / Read MC → File...</b> ". The start time for day files is always the first record of the day!	
Stop:	Allows entry of ending date and time for the requested data Entry is only possible for " <b>Memory Card / Read MC → File...</b> ". The stop time for day files is always the last record of the day!	March 28, 1995   8:10 am

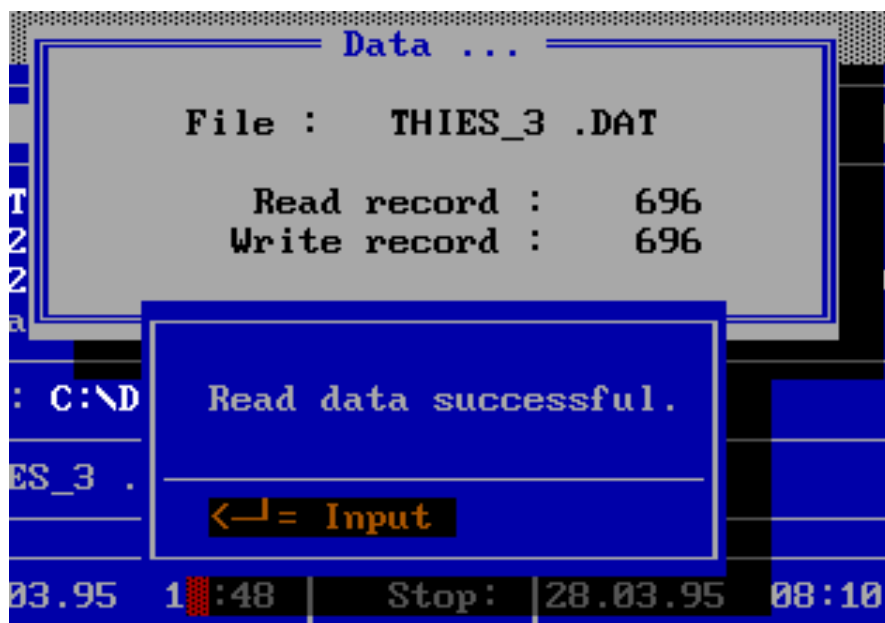
<↵> starts the reading process.

<Esc> returns to the menu.

<F1> calls for the context-sensitive help functions

<F2> switches to the second data type (extreme values), if available.

During the reading process a window is displayed, showing the filename, the record currently being read from the Memory Card, and the number of records written.



Reading can be cancelled by pressing <Esc>.

If the process is terminated, pressing <↵> returns the program to the window "Read Memory Card".

Table of possible causes for errors

Cause	Solution
Memory Card Reader not connected to PC.	Connect Memory Card Reader.
Memory Card Reader connected to incorrect printer port.	Check setting of printer port number under " <b>Options / Port...</b> " (see section 4.3.3 <i>Port...</i> on page 17)
Memory Card is not properly inserted into Memory Card Reader	Memory Card must snap into Memory Card Reader.
Memory Card contains defective or no data.	<i>Always</i> use the anti-static bag to transport memory cards.

Cause	Solution
	The voltage of the Memory Card's battery should still be greater than 2.5 V.
	When writing to the Memory Card make sure that the datalogger has signalled end of transmission.
Hardware defect	Have Memory Card and Memory Card Reader tested by the manufacturer. Try using other ports on the PC.

**Note:** After having read from the Memory Card, remove it from Memory Card Reader. Otherwise the Memory Card's battery might quickly discharge after the PC is turned off.

#### 4.2.1 READ MC → FILE...

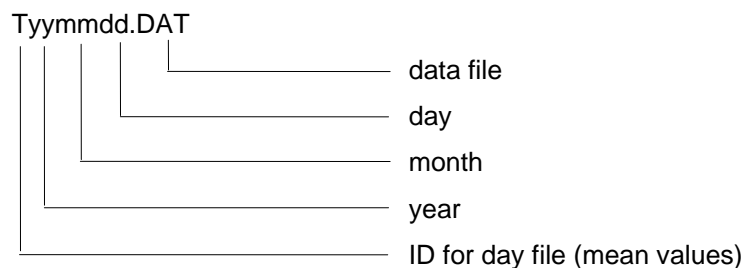
With "**Memory Card / Read MC → File**" you can read data from a Memory Card and save them to a file. You can choose the filename and enter starting and ending time for which data is to be saved. If the file does not exist at that time, the program creates it, otherwise it appends data to the existing file.

The "automatic append mode" is active if an existing file was specified. The date and time of the last record of the file are determined. The time is incremented by one minute and, upon confirmation, is entered as starting time. If you do not change this time, the missing data records are continuously appended to the file. This, of course, requires that the missing records are available on the Memory Card.

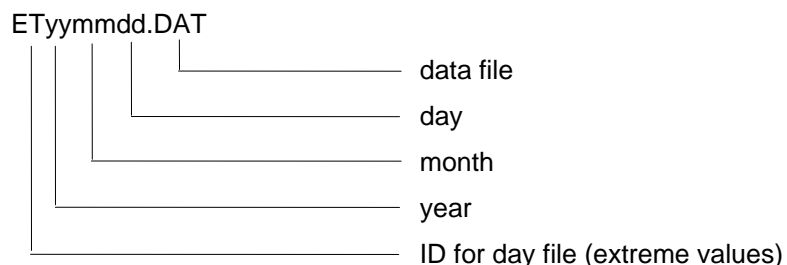
#### 4.2.2 READ MC → DAY FILE...

The command "**Memory Card / Read MC → Day file...**" reads data from a Memory Card and saves them in one or more so called day files. A day file contains data of one day. The name of a day file is automatically created by the program according to the following scheme:

Mean values:



Extreme values:



Example: day file of August 1, 1994 is T940801.DAT

**Note:** Mean value day files are required for our evaluation program "UNISOFT".

This method of naming files has several advantages:

- Information on the date and record type can be determined directly from the filename.

You can list files in alphabetical, and therefore also in chronological order (with MSDOS 6.0 or higher):

Example: **"DIR T\*.DAT /O"**

or **"DIR T\*.DAT /O-N"**

- You can manage day files quite easily with help of DOS commands like "DIR" or "COPY" in connection with wildcards ("\*" or "?").

Example: **"COPY D9408??.DAT A:"**

copies all mean value day files of August 1994 to drive A:.

Example: **"DIR ET9\*.DAT"**

shows the file information of all extreme value day files from 1990 to 1999.

- You can assemble separate day files to one new file using the DOS command "COPY":

Example: **"COPY T940801.DAT + T940802.DAT + T940803.DAT W9431.DAT"**

copies the contents of the three day files from 08/01/94 through 08/03/94 to the file W9431.DAT.

**Notes:** *For Memory Cards that were used with datalogger DL15 and software version V1.09 or DL 1/N with V1.03 the year identification in the filename will be "00". We recommend changing the filename manually by use of the DOS command "RENAME".*

*The path of the file is determined by the input under " **Directory Mean...**" in section 4.3.1 on page 16 or " **Directory Extreme...**" in section 4.3.2 on page 17.*

All existing day files within the specified time period (Start/Stop entry field) are searched by the program. If a day file is incomplete (determined by a non-existent record for 24:00 hours), the program will try to append the missing data. Non-existing day files are created if data for that day are available on the Memory Card.

### 4.3 OPTIONS MENU



In the "Options" menu you can find commands that allow you to view, edit and save the program's preferences.

**Note:** All options are only saved when you select the "Options / Save" command (see section 4.3.9 Save on page 19).

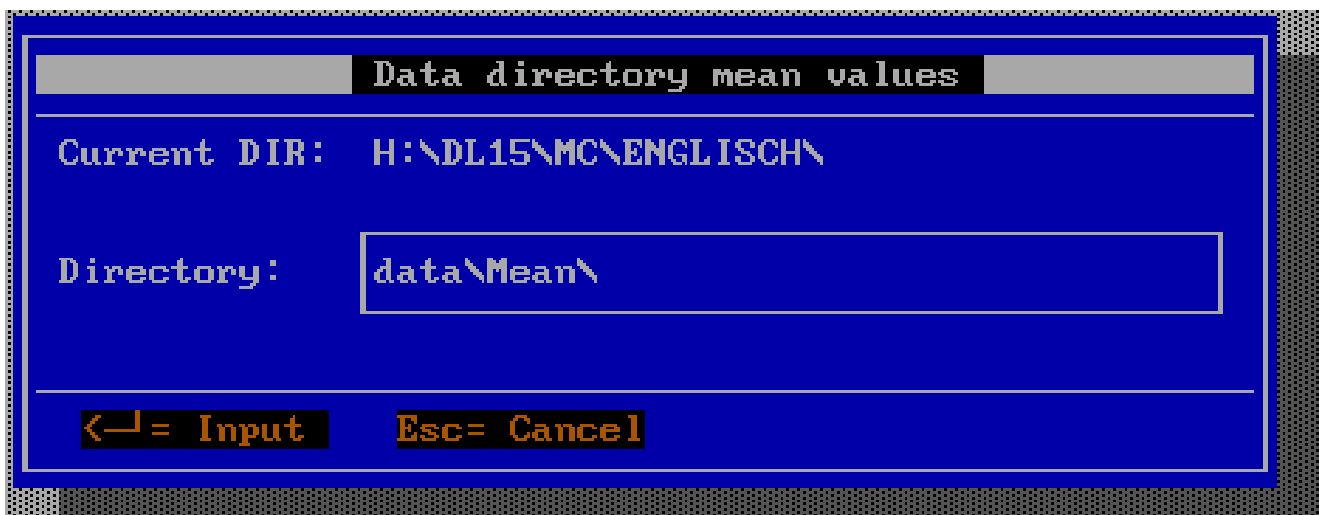
#### 4.3.1 DIRECTORY MEAN...

The "Options / Directory Mean..." opens a dialogue window that allows you to specify a path for the mean value files (or precipitation values for datalogger DL1/N).

**Note:** You must create the specified path on the media by yourself !

If you do not enter a path in the text input field, files will be saved to the shown current directory ("Current DIR:").

Example:



All mean value files are saved in the "data\mean\" subdirectory. The files can be found in "H:\DL15\MC\ENGLISCH\DATA\MEAN\". As an alternate approach you could also enter "H:\DL15\MC\ENGLISCH\DATA\MEAN\" in the text input field..



### 4.3.2 DIRECTORY EXTREME...

The command "Options / Directory Extreme " is similar to the command "Options / Directory Mean..." (see section 4.3.1 *Directory Mean...* on page 16), except that it specifies the path for extreme value files (this command has no function for Memory Cards from the datalogger DL1/N).

### 4.3.3 PORT...

The command "Options / Port..." allows you to choose a parallel (printer) port of your PC for the Memory Card Reader. The chosen port must be connected to the Memory Card Reader via the cable supplied in order to read from a Memory Card. In case your PC has only one port that is occupied by the printer, you must disconnect the printer cable before reading.

In this dialogue window you may only select one port at a time.

Pressing <F10> will save the setting to the configuration file "MC\_READ.CFG".

**Note:** You may only select ports which actually exist ! All ports that have "ϕH" as base address ("Adr.:") are not present.

Example:



LPT3 may not be chosen since it is not available. Here LPT1 is selected as the reading device.

### 4.3.4 MOUSE CONTROL...

The command "Options / Mouse Control..." allows you to set the mouse sensitivity. It sensitively establishes the distance the mouse must be moved on the mouse pad.

Setting the mouse sensitivity is accomplished by means of a dialogue box whose main element is a scroll bar. You can change the value using the <- and -> keys. The scroll bar always displays the value.

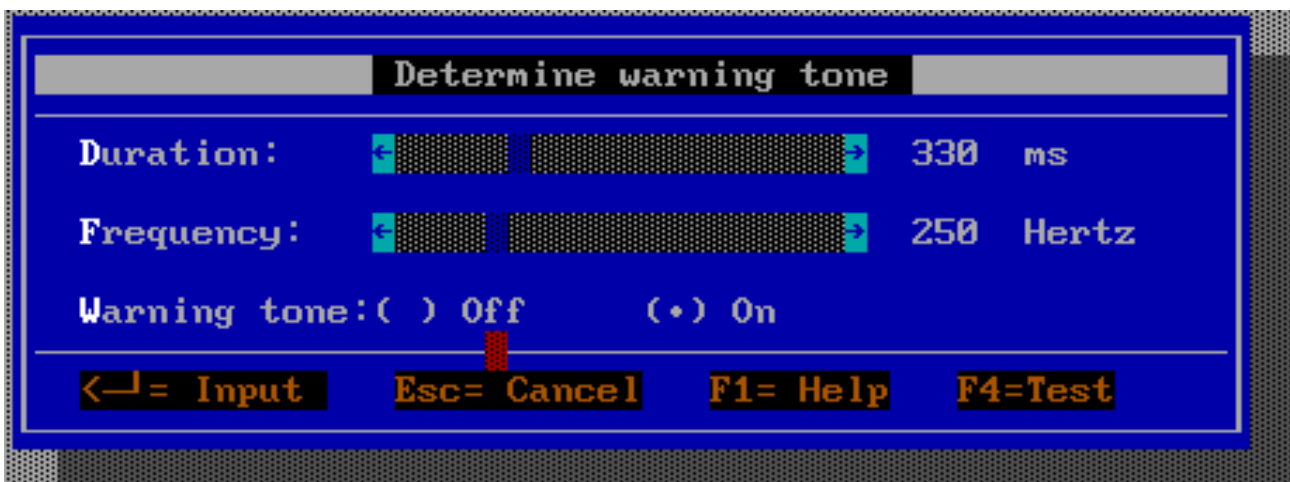
This is what the dialogue window looks like:



#### 4.3.5 SOUND...

The command "**Options / Sound...**" allows you to switch an audio signal on or off. Furthermore, you can set the duration and frequency of the sound.

This is what the dialogue window looks like:



Using the button [F4=Test] you can test the current settings in the dialogue box.

#### 4.3.6 COLOUR...

The command "**Options / Colour...**" opens a dialogue window in which you can select a colour palette that will be used for the menus and dialogue windows.

If a colour monitor is connected the user can choose from five colour palettes; in case of a monochrome monitor there is only one monochrome colour set.

This is what the dialogue window looks like:



### 4.3.7 SHADOW ON

The command "**Options / Shadow On**" determines whether all menu windows are displayed with or without shadows. If the options is on, there is a small checkmark before the menu item.

### 4.3.8 DOUBLE BORDERS ON

The command "**Option / Double Borders On**" determines the border type for all menu windows. Possible border types are single and double lines. If double line borders are selected, a checkmark precedes this menu item.

### 4.3.9 SAVE

The command "**Options / Save**" saves all settings. The options "**Directory Mean...**" (see section 4.3.1 *Directory Mean...* on page 16), "**Directory Extreme...**" (see section 4.3.2 *Directory Extreme...* on page 17) and "**Port...**" (see section 4.3.3 *Port...* on page 17) are saved in the configuration file "MC\_READ.CFG". All other preferences are saved in the program file.

The configuration file "MC\_READ.CFG" contains crucial parameters for the successful operation of the program and is a text file.

Example:

```
data\Mean\  
data\EXTREME\  
.DAT  
UNISOFT  
0
```

Line No.	Item	Explanation
1	Path for first data mode	mean values of the DL 15 or precipitation values of the DL 1/N
2	Path for second data mode	extreme values of the DL 15, not used by the DL 1/N
3	Name of file extension	Default setting ".DAT" ( <i>Not for Day files!</i> )

Line No.	Item	Explanation
4	Output format	only "UNISOFT" for now
5	Number of the printer port to which the data reader is connected	LPT1...LPT3 corresponds to "0"..."2" LPT1 is selected

**Note:** *All parameters of the configuration file, except the third and fourth line can be changed by the program itself!*

## **4.4 QUIT**

### **4.4.1 QUIT PROGRAM**

Selecting the command "**Quit / Quit Program**" or pressing the <F3> key quits the program.

**Note:** *The preferences are not saved by this function. If you have changed options and want these to be active when you restart the program, you should select the "**Options / Save**" command (see 3.3.9) before leaving the program.*

### **4.4.2 PROGRAM CONTINUE**

Selecting the command "**Quit / Program Continue**" returns the program to the panel body and shows the action bar.

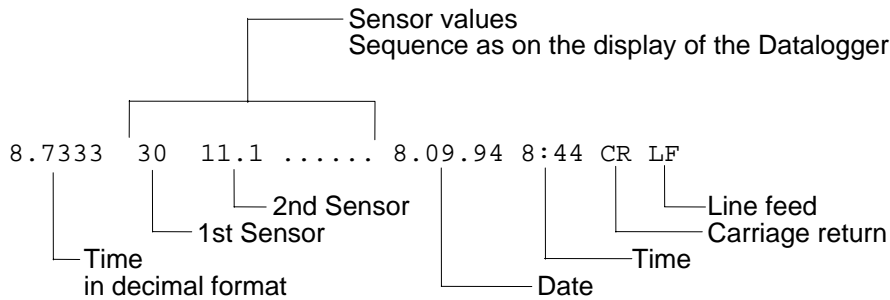
## 5 ANNEX A

### SERIAL DATA FORMAT

The data format corresponds to that of the "UNISOFT" program. Erroneous values are marked by one or more "?", or "!". The data are output in tables. The separator character is at least one space character (ASCII 32). Lines are concluded with "CR" (Carriage Return) and "LF" (Line Feed).

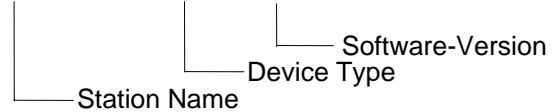
#### MEAN VALUES:

##### DATA LINE:



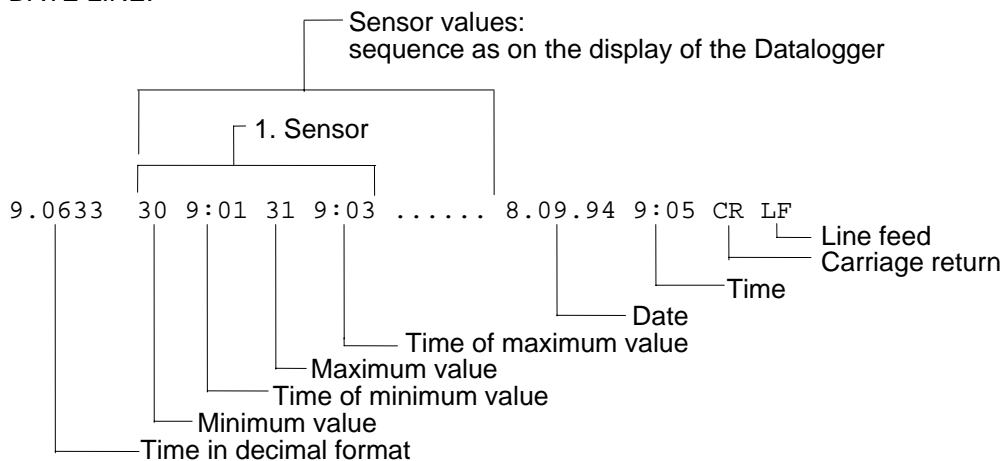
Date and time refer to the end of the measurement.

CONCLUDING LINE: "END OF DATA" "THIES-CLIMA" "DL15 V2.00a"



#### EXTREME VALUES:

##### DATE LINE:



Concluding line as for the mean values.



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