WINVAR Version 2.0

Instruction Manual

Contents:

Version 27/08/2001

1.0 Installation of the software

The software WINVAR 2.0 as a 32 Bit Version is on one 3 ½" floppy disc. The software WINDOWS 95, 95, NT or 2000 is to be started on your PC and with help of the Windows-Explorer, the connected disk drive, in which the provided 3 ½" disc is, for example Drive A, you will find the following file names:

DIELEN.INI
WINVAR20.EXE
DEUTSCH.INI
ENGLISCH.INI

Make a directory on your hard disk, for example C:\VARIOMAS\WINVAR and copy all files in this directory. You should set your screen resolution to 1024 x 768 dots to get the best view. For the case that you use 800 x 600 dots use your Windows setup manager to change the display resolution of your PC monitor.

Then you can start the program WINVAR by a double click on the „WINVAR20.EXE" file.

Note:
In case after starting a mistake message "COM Port Error" appears, this message window has to be closed by the button "Ignoring".

Through starting of this program the sub-directories "Daten" and "Log_buch" are made in this directory automatically. The sub-directory "Daten" is for your collected flow data and the sub-directory "Log-buch" for your logbook recording.

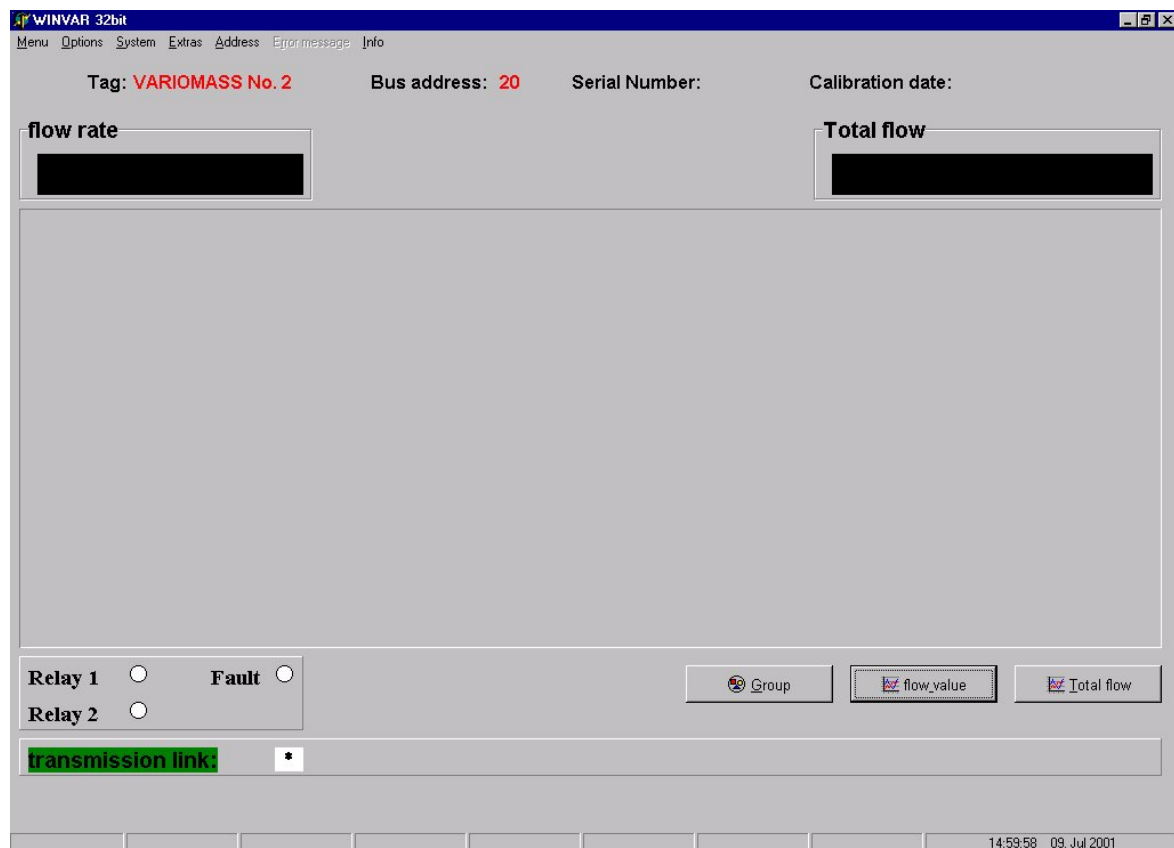Following picture emerges after starting this program in a off-line modus:

Fig. WINVAR - Main Menu (Off-Line Modus)

The PC with the software produces a connection with the VARIOMASS electronic if all of the following parameters were put into the software.

Note: your Windows 95, 98 or 2000 FIFO buffer must be deactivated as follows:

1. One can alter the FIFO attitudes of the serial interface-card in the menu SYSTEM. Call the file "SYSTEM" through START / SYSTEM /
2. Choose the attitude for " Manager "
3. Choose under COM connections, COM and LPT, your COM Port 1 or 2
4. Check the " connection-attitudes ": 9600 bauds, 8 data, 1 stop bit, no Parity and no protocol
5. Click with the mouse on "WIDEN.." and deactivate the box "FIFO buffer" in that you remove the hook with a mouse-click or you put only the reception-buffer on quite low (1).
6. Store the attitudes and close all Windows

2.0 SYSTEM SETUP

Before you can start with On-Line visual graphic you should setup the system configuration as followed:

Menu	Options	**System**	Extras	Address	Error message	Info

- RS 232 serial port
- Sensor data
- price current factor
- Logbook
- Language selection

2.1 RS 232 Serial Port

Under the header System you find the RS 232 serial port selection modus. Click on this one and you may change the serial port for your interface converter to the PC at Port address of "COM 1" or "COM 2". Make a mark besides your COM Port # if necessary and press the button Close.
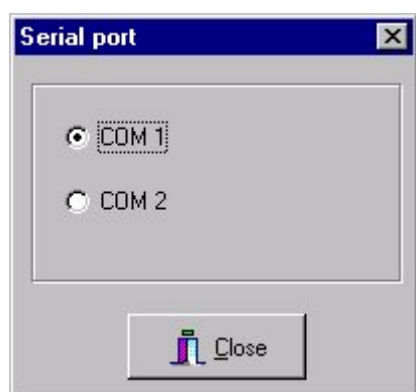

Fig. Com Port selection

Note that only the COM 1 or COM 2 port of your PC can be taken for the data transfer. Make sure that this serial port is not used by another program like fax ware or mouse.

2.2 Sensor data

This will show you the calibrated VARIOMASS sensor data of your actual Bus address only

if you have a transmission link to your electronic (on-line).

2.3 Price current factor

Under the header System you find the Price current factor selection modus. Click on this one and input your factor to calculate from the total consumption to a total amount as a multiplier and choose your currency from the pull down menu and press OK.

2.4 Logbook

You may have a look at the logbook later which record all of your settings day by day. The logbook file has the following format YY-MM-DD.LOG. You can open the file by a double click and you will see the following example:

Fig. Logbook from date 10.07.2001

You can print all records by pressing the Printer button or close this window by the Abort Button.

2.5 Language selection

Under the header System you find the Language selection modus. Click on this one and choose the right language "English" or "German" language at this time and press OK.

3.0 Bus Address

You may now be able to input the RS 485 Bus address of your VARIOMASS units.

Note that each VARIOMASS electronic must have a BUS address between 01 and 32. Press on your VARIOMASS electronic the [MENU] button and input the Code [1] [3] [7] [9] and press the [ENTER] button. Than press again the [ENTER] button and go with the down arrow to the end of the menu until you see "Input Bus address?". Press enter and input a two digit bus address for each unit and than press the [ENTER] button. Leave this Menu by pressing the [EXIT] button and record the Bus address and Serial number of each unit.

Go to the Group window on you software by a click on the "Group" button:
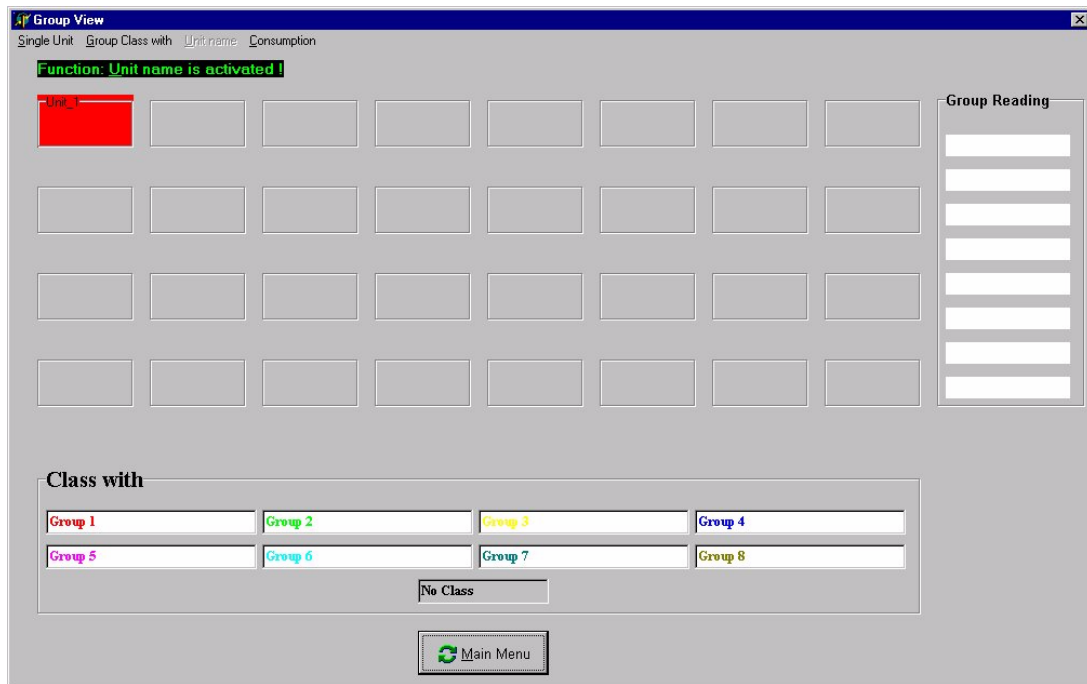
Fig. Group view Off-Line Modus

Press the button on top "Unit name" so that the Function "unit name is activated" instead "single unit is activated " appears. Click with your mouse cursor on the first field # 1 and the following window will open:
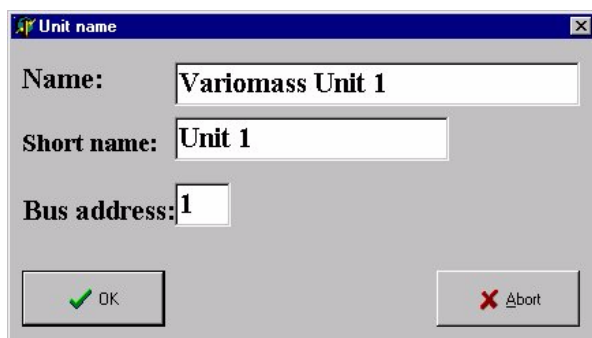

Fig. Input Unit name

Now you need to input the long Tag name (example: VARIOMASS Unit No. 1) of the first VARIOMASS unit and a short name for the group view (example: Unit 1) and the Bus address (example 1) of this first unit which you have given to the VARIOMASS electronic before and press the OK button.

After this you can select the next unit with your cursor and input in the same way the next VARIOMASS unit and Bus address (example 2) and so on until all Bus addresses are mentioned.

Note:
Do only input Bus Addresses which you have input in the VARIOMASS electronics. All other fields must have the Bus address Zero (0) otherwise you get an error message.

Now each unit can be select to a Group so that the total amount of this group can be calculated and the total flow amount of all units in group is indicating in the field "group reading". The number of units which belong to one group (group # 1 to 8 with different colors) can be from 1 up to 10 units so that the total amount of all units in one group can be calculate later by a mouse click.

For this case select the "Group class with" button so that the message Function: "group class with is activated" appears. Now you have to select a group #1 to #8 with the mouse hand and go to the unit field #1 and mark this field with a mouse click so that this unit has the same color as the pre selected group. After this you can add more units to this groups if necessary in the same way or select another group (#2..8).

Note:
You can delete the word "group" and make your own text like "bill of cost" when "Group class with" is activated. Click on the Croup so that the cursor is blinking and use the delete or back button of you keyboard and enter the new text.

After that please click with the mouse on "Single unit" so that the function single unit is activated. You can leave this group by clicking with the mouse on one unit which is activated (unit #1 to 32) or click on the button "Main Menu" to switch to the on-line graphic which may look like this picture:

Fig. On-Line Graphic

With a successful connection between your PC and the VARIOMASS transmitter the transmission link shows a green star blinking (*) and the flow rate and total flow values from the selected VARIOMASS unit will shown as above figure. Also the Tag name (long unit name), the Bus Address, the Serial Number and the calibration date (optional) will be shown on the screen. The On-line flow rate will be shown as a function of the time (last 2 ¼ hours) and will be updated every second. The time x-axis will be scroll automatically after the end of the x-axis is reached. The full scale of the y-axis (flow rate) will be taken from the flow rate in the VARIOMASS unit.

With the Group button you can go to the Group view where you see on-line all units with the actual flow in the upper line and the totalizer value in the button line. On the right side you find the total actual flow value reading of each group. Please note that each Group (1..8)

has a different color - you can have 1 to 10 units match which one group so the group reading is a sum of the reading of each unit which belong to this group.

Note:
Only units with the same flow unit (example SCFM) are allow to be in one group - do not set different flow value units (like SCFM and m³/h) to one group.
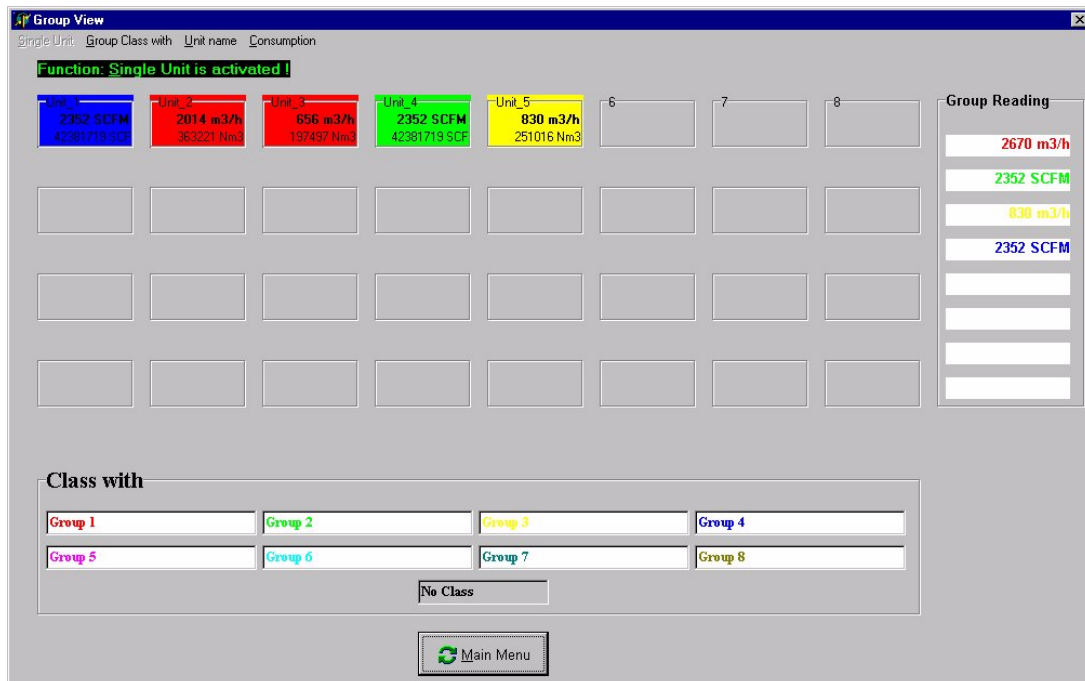

Fig. On-line Group view with 5 VARIOMASS units

With the Main Menu button you can switch to the main menu window or press with the mouse on one unit window to see this unit in on-line view when the function "single unit is activated" is on.

With an unsuccessful connection, the red star is blinking and no on-line graphic appliances on the screen. In this case you may check if the FIFO buffer is deactivated, your COM Port 1 or 2 is activated and not used by another program (Fax or Mail Server) and your wiring is correct. Note that the Bus address in your electronic must match with your Bus addresses of your software.

Note:
only for the time that your on-line screen is on display the value will be actuated. When you switch to the „Group menu" or other menu points the graph will not print on the screen until you change to the on-line modus back.

4.0 Menu

4.1 Settings of standard values

You may change now with an on-line connection to the VARIOMASS electronic the pre setting of the standard value in your VARIOMASS electronic. Go with the mouse pointer under "Menu" to "Standard value" and on the right you find the listed positions:

Menu	Options	System	Extras	Address	Error message	Info

- **Standard value** ➜ Tag number
- Max. flow value   Dimension
- Counter 1 + 2   Flow range
                   Zero shift
- Close   pipe inside diameter
                   Filter type

The following changes maybe necessary:

a) Dimension - you can choose by a pull down menu between different flow rate dimensions as SCFM, Nm³/h or Nm³/min.

 Note that it is not allowed to change the flow rate dimension during recording unless you delete all data in the sub directory "Daten" and you must reset (switch off and on) the VARIOMASS electronic after 5 minutes so that the LCD Display will be up-date the changes of the flow unit.

b) Flow range - your flow range is important for the on-line graphic because the full scale value of the y-axis is your flow range from your electronic which also will be responsible for the 0/4..20 mA output. So if the y-axis scale needs to have a new setting choose this option and make the changes and reload the on-line graphic by changing the unit with another bus address. Click on the "Address" button and choose a different unit:

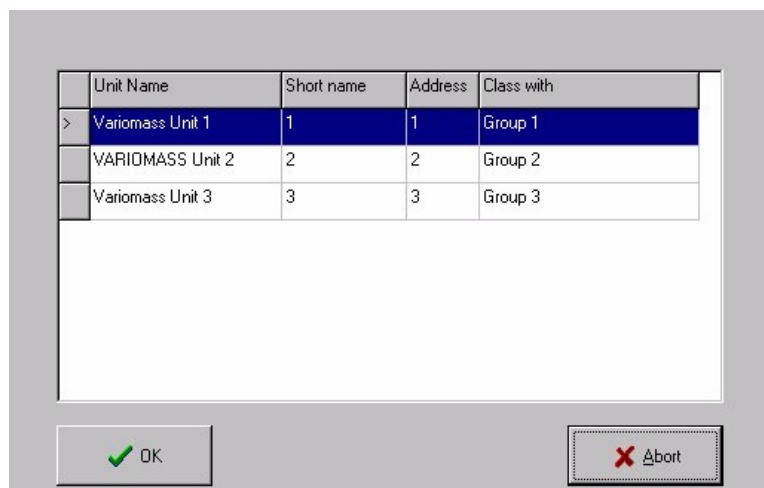| Unit Name	Short name	Address	Class with
Variomass Unit 1	1	1	Group 1
VARIOMASS Unit 2	2	2	Group 2
Variomass Unit 3	3	3	Group 3

✔ OK   ✗ Abort

Fig. Address selection

After selecting a new unit you can press the OK Button and the on-line graphic will re start with a new screen. Than you may go back to the original Unit which flow range needs to be refresh. In some cases when you have a lot of units be on-line it maybe necessary to go back and for to refresh the y-axis with the new flow range value.

c) Pipe inside diameter - you may also check your pipe inside diameter of each individual unit. You can check and input a new pipe inside diameter in "mm" and send this value to the VARIOMASS electronic. Input the right pipe inside diameter and press the OK button to send this value to your electronic.

4.2 Max. flow value

Menu	Options	System	Extras	Address	Error message	Info

- Standard value
- **Max. flow value**
- Counter 1+2
- Close

You can input a maximum flow value into the electronic or change the preset value. By clicking on the Start and Stop date this window will open a calendar. Input a maximum flow value which override will be recorded in the VARIOMASS electronic only during the preset time. You can see the maximum value by pressing the MAX Button on the electronic.

4.3 Counter 1+2

This item is to preset in the VARIOMASS unit the totalizer value #1 and #2.
Press on the Counter 1+2 and the following window will be open:

Fig. Totalizer setup menu

For totalizer #1 in the VARIOMASS unit you must set the start and stop time and date and you can reset the Totalizer value by clicking beside the YES sign. For the date you can use the pull down calendar. Same as for Totalizer #2. Press the OK button and the pre set value will be transmitting to the VARIOMASS electronic.

4.4 Close

You can close this program by clicking on "Close" and the following window will be shown:
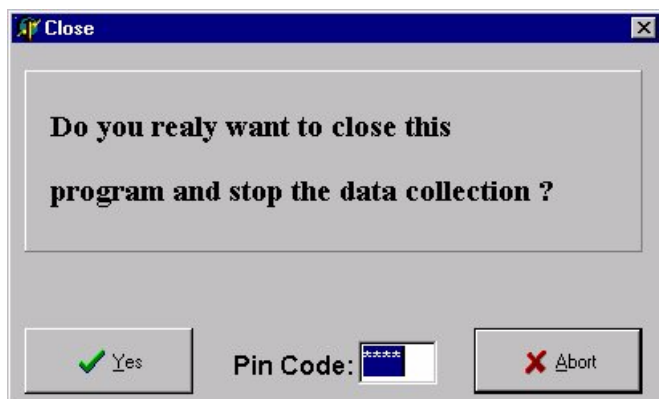
Input the pre-set PIN Code 1 3 7 9 with you PC keyboard (PIN code will not show on the monitor) and press the YES button (not ENTER). Please note that this program needs to be on-line for flow monitoring and recording all the time or press Abort to continue with flow recording. If you want to change the PIN Code contact the manufacturer.

5.0 Extras

5.1 Total flow calculation

Menu	Options	System	**Extras**	Address	Error message	Info

- **Total flow calculation**
- Export data

Under this Item this program can calculate the total flow of this indicating bus address (Unit 1 to 32) for one or more days by pre setting the start and stop date by opening the pull down calendar.
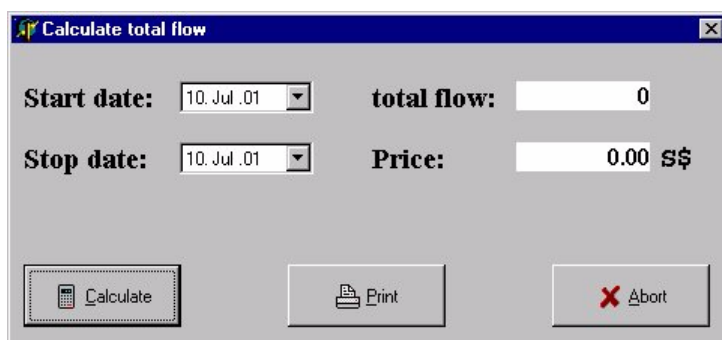

Fig. Calculate total flow for a single unit

Note:
You must wait until the pull down calendar appears automatically before you press the Calculate button. To get the total flow for one day (24 hours) please enter the same date in the start and stop line.

After choosing the start and stop date press the "Calculate" button so your total flow will be shown and the total amount according to your settings of the price current factor will be displayed. Close this window with the "Abort" button or "Print" this price amount on your printer.

5.2 Export Data

Under this item you can export the recorded flow data for each unit to a ASCII format by opening the following window:
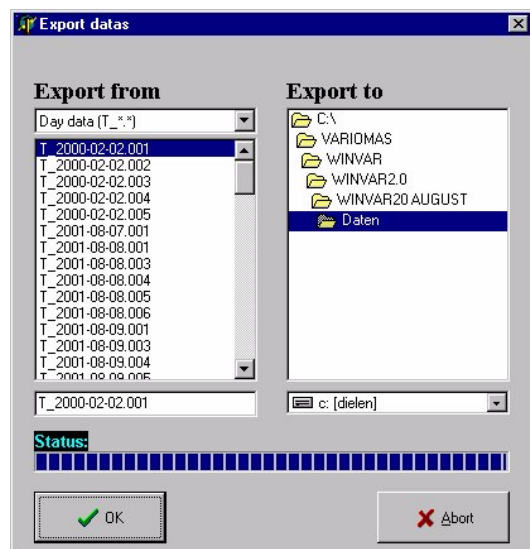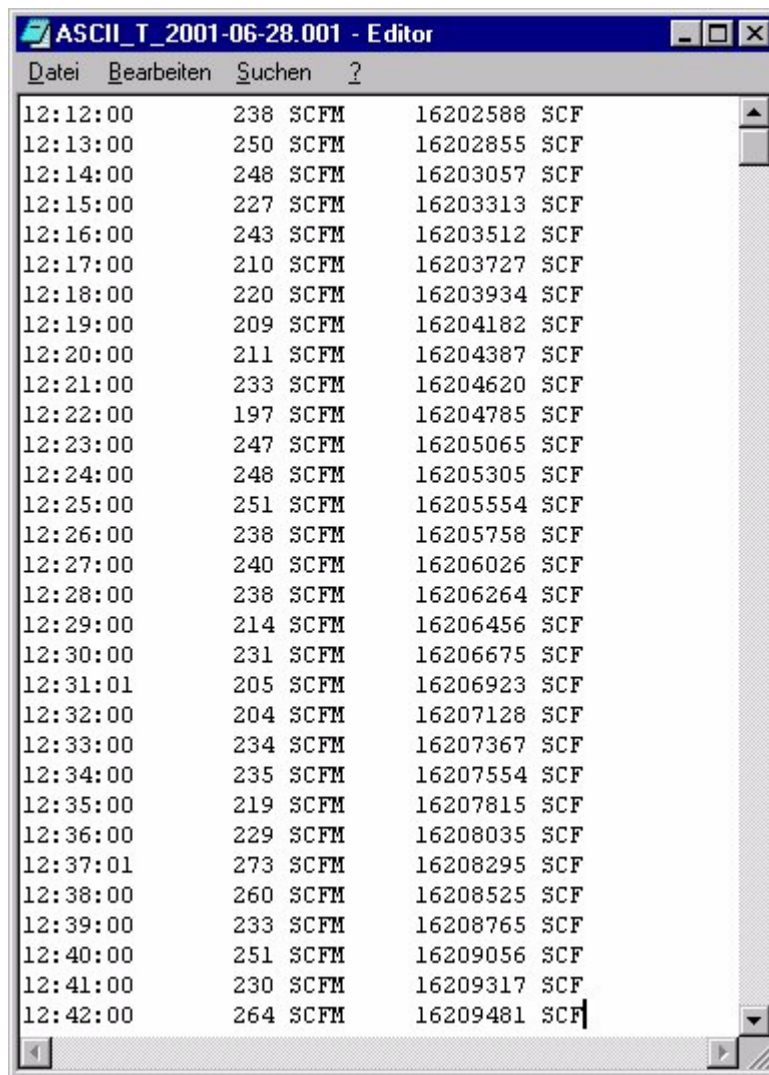

Fig. Export Data

The WINVAR software will record on your hard disc for each unit with the Bus address (001 up to 032) per day a file which has the file name beginning with T for day followed by the year (example 2001) the month (example 06) the day (example 02) and the 3-digit bus address. Select a day file with the mouse pointer and press the OK button and the status line will indicate the exported function. In the directory "Daten" under WINVAR you will find the exported ASCII file name which has the following format: ASCII_T_YYYY-MM-DD-BBB with T = day diagram, Y = year M = month, d = day and B = Bus address . You can open this exported files with the help of the program "MS Editor" or "MS Notepad".

Also the WINVAR software will store for each unit a data file per calendar week and per month. To export this file you have to use the pull down menu in the first kine to change from the day file (T) to a week file (W) or month file (M).

Press the Abort Button to close this window and go with your MS Explorer to the directory WINVAR/Daten and open the file with the MS Editor.

```
ASCII_T_2001-06-28.001 - Editor
Datei   Bearbeiten   Suchen   ?

12:12:00      238 SCFM      16202588 SCF
12:13:00      250 SCFM      16202855 SCF
12:14:00      248 SCFM      16203057 SCF
12:15:00      227 SCFM      16203313 SCF
12:16:00      243 SCFM      16203512 SCF
12:17:00      210 SCFM      16203727 SCF
12:18:00      220 SCFM      16203934 SCF
12:19:00      209 SCFM      16204182 SCF
12:20:00      211 SCFM      16204387 SCF
12:21:00      233 SCFM      16204620 SCF
12:22:00      197 SCFM      16204785 SCF
12:23:00      247 SCFM      16205065 SCF
12:24:00      248 SCFM      16205305 SCF
12:25:00      251 SCFM      16205554 SCF
12:26:00      238 SCFM      16205758 SCF
12:27:00      240 SCFM      16206026 SCF
12:28:00      238 SCFM      16206264 SCF
12:29:00      214 SCFM      16206456 SCF
12:30:00      231 SCFM      16206675 SCF
12:31:01      205 SCFM      16206923 SCF
12:32:00      204 SCFM      16207128 SCF
12:33:00      234 SCFM      16207367 SCF
12:34:00      235 SCFM      16207554 SCF
12:35:00      219 SCFM      16207815 SCF
12:36:00      229 SCFM      16208035 SCF
12:37:01      273 SCFM      16208295 SCF
12:38:00      260 SCFM      16208525 SCF
12:39:00      233 SCFM      16208765 SCF
12:40:00      251 SCFM      16209056 SCF
12:41:00      230 SCFM      16209317 SCF
12:42:00      264 SCFM      16209481 SCF
```

Fig. Example of the open ACII data file for the day 28.01.2001 and bus address # 1

You can use the data file to export this one to MS Excel and make your own flow diagram.

Fig. MS EXCEL data file open

You can make you new diagram with EXCEL. Mark the column A and C and make a new diagram with your own settings.
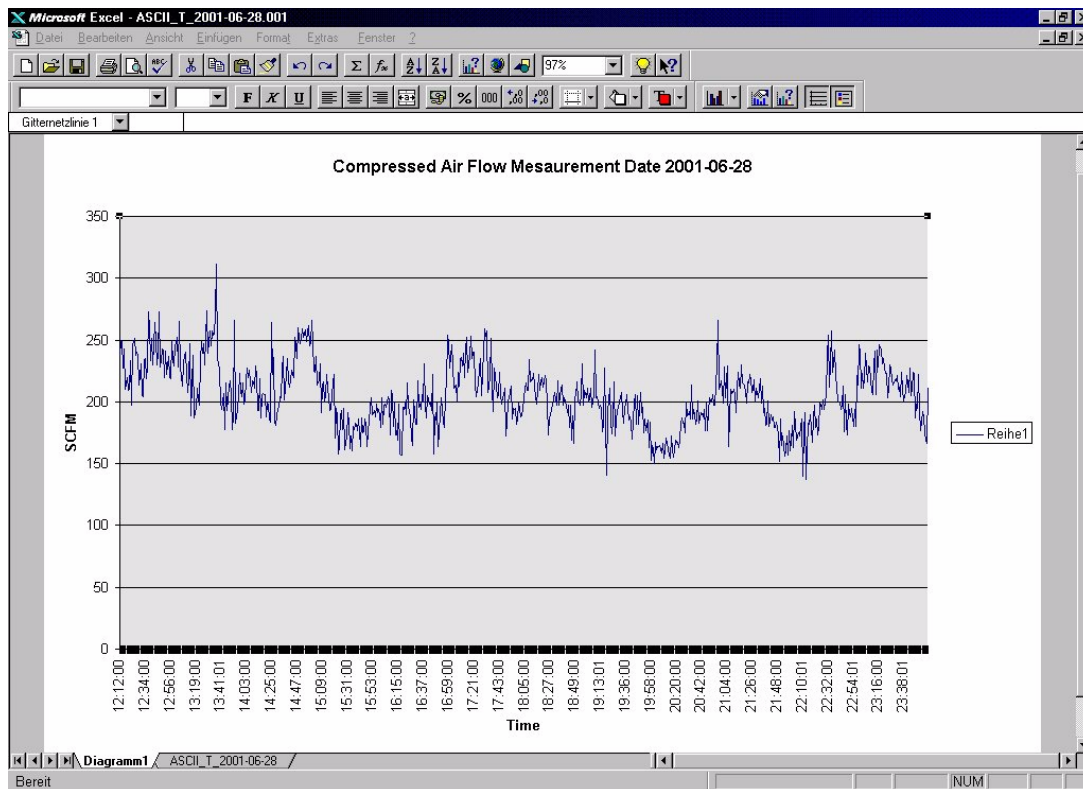
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Fig. MS Excel day flow diagram

6.0 Error message

This window will show you the Fault alarm messages of the VARIOMASS field electronic (not valid for the DIN panel mounting electronic) on the screen. Also the Fault alarm contact will be indicating by a red LED on the transmitter and on the screen of the Main Menu level.

7.0 Info

This window will show you the address of your vendor and the revision number of this software.

8.0 Options

This level is active only if your VARIOMASS electronic has this special options as:

8.1 Pulse Output

Menu	**Options**	System	Extras	Address	Error message	Info
	• Pulse output					
	• Relay 1 +2					

In this level you can set the pulse output in the VARIOMASS transmitter to a value between 1 m³ per pulse or 1 SCF per pulse up to the value of 999 m³ per pulse or 999 SCF per pulse so that the pulse output of the electronic is preset for an external pulse counter for the total flow.

8.2 Relay 1 and 2

In this level you can preset the value for the relay alarm contacts #1 and/or #2 for a maximum or minimum flow value or a total value for totalizer number one or number two. The activating of the relay contact one (K1) or two (K2) will be indicating by a green LED on the unit and on the software screen in the Main Menu. You may not allow to set the same relay alarm contact for a totalizer <u>and</u> a flow value.

9.0 flow value diagram

From the Main Menu level (on-line screen) you can press the „flow value" button to switch over to a „time period" selection.
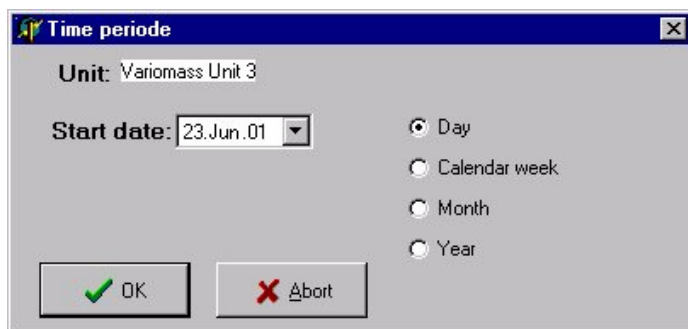

Fig. Time period selection   Fig. Time calendar

For the flow value vs. the time period you can choose between different time frames as:

one day, one week, one month or one year and with a click on the pull down start date menu a calendar window will automatically open and you can change the time by clicking on another day or change the month with the left and right buttons (or use the pull down menu by pressing on the month name in the calendar). Press on one day number or on the red circle for today and wait until this calendar close automatically (it can take a few seconds).

Note:
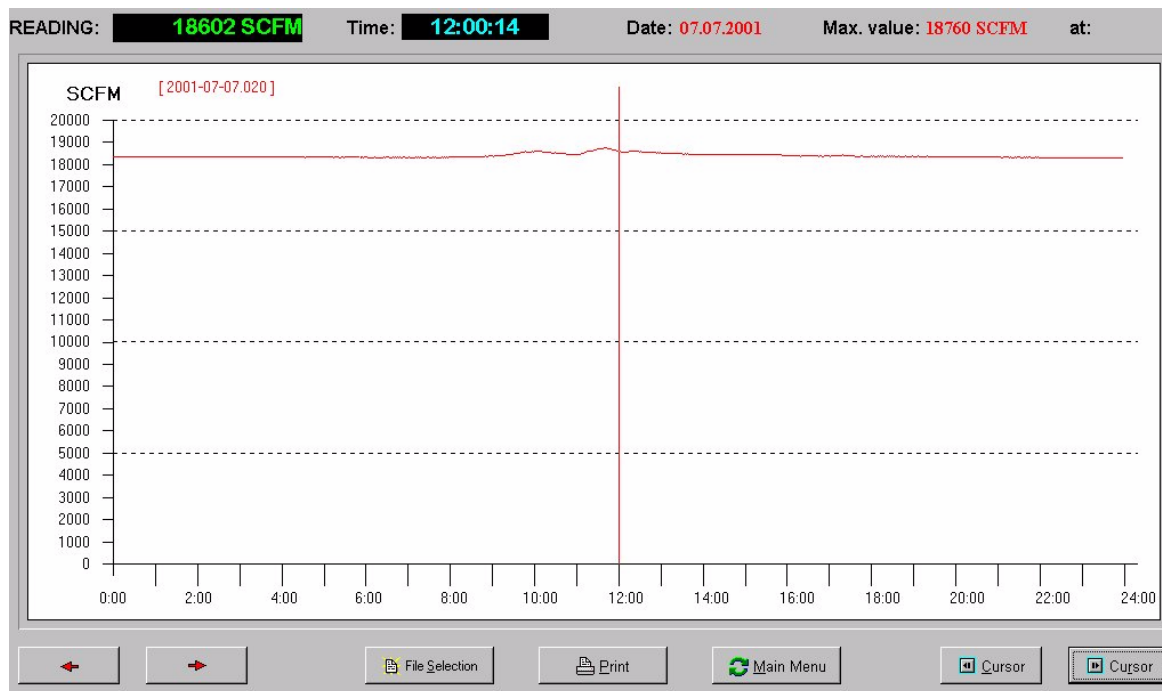Do not press the OK button before this calendar automatically disappears.

Fig. Day flow value for a single unit with bus address 20

This day flow diagram is for a single unit for one day [2001-07-07-020] which means the year 2001, month 07 and day 07 with bus address 20. With the two cursor button you can move the red cursor line over this diagram from 00:00 hour to 24:00 hour and on the above LCD display you see the actual value and time of your cursor line. You also can use you mouse pointer and click on the graphic to set the red cursor line to a specify time (faster than moving the cursor the left and right cursor button.

With the two red buttons on the left side you can move to another day - the day before (example yesterday) use the left arrow or the day after (example today because tomorrow is not possible) use the right button. Do not go to a future time or in the past to a time when no data are recorded.

When you press the button „File selection" you can select by the mouse click more than one unit or more than one day for the same unit (maximum is 7).
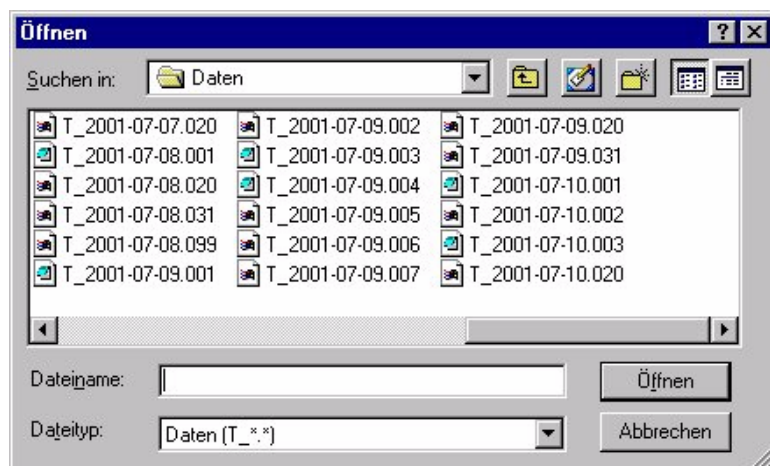

Fig. Data File selection

Press the SHIFT button and choose with your mouse one to seven file names from the button to the top i.e. the higher bus address first (example 006) and than the lower addresses (005, 004, 003, 002, 001) or the older day with the same bus address (2001-07-10.020) and than the younger days (2001-07-09.020, 2001-07-08.020 a.s.o.) and than press the „Open" button with the mouse and the selected day diagrams will be shown on one display.
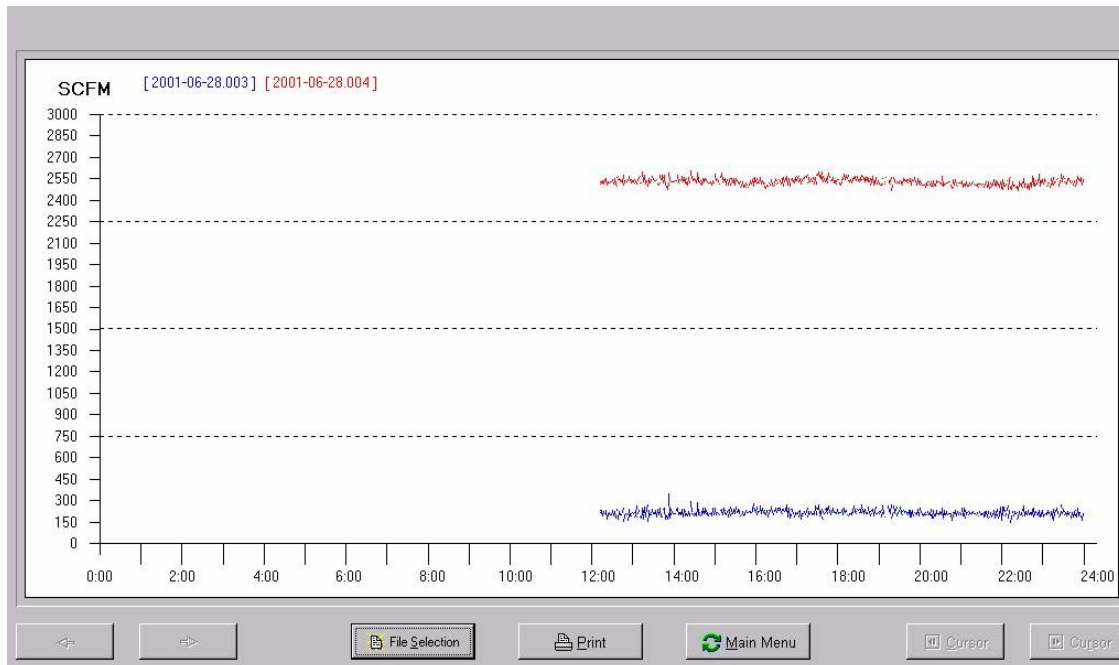

Fig. Two Files of one day (28.06.2001) are shown with the bus address no. 3 (blue color) and the bus address no. 4 (red color).

In this diagram you can not use the left and right time button and the cursor button.

You can close this window by the „Main Menu" button or use the printer button to print the graphic with your printer. Close this window with the Main Menu buton.

Note:
This multiple screen can only use for a day period flow diagram.

For the week flow diagram you will see the flow of each day (Monday to Sunday) in this week for one selected unit. With the left and right button you can move to an older or younger calendar week and the cursor will indicate the flow reading of each day.

For the month flow diagram you will see the flow of each day of this month (1 to maximum of 31 days) for one selected unit. With the left and right button you can move to another month and the cursor will indicate the flow reading of each day.

For the year diagram you will see the total consumption of each day (1 to 365) in this year for the selected unit. With the left and right button you can move to another year and the cursor will indicate the flow reading of each day.

10.0 Total flow diagram

From the Main Menu level (on-line screen) you can press the „Total flow" button to switch over to a „time period" selection.
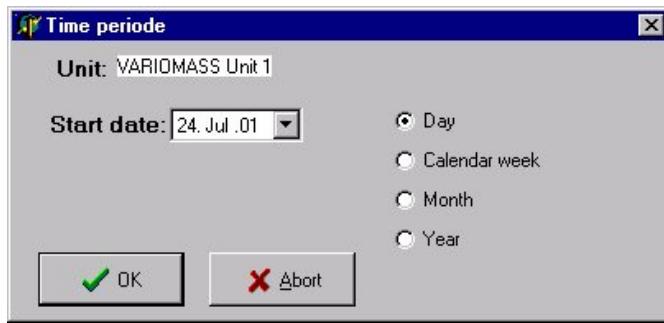
Fig. Time period selection

For the total flow vs. the time period you can choose between different time frames as:

one day, one week, one month or one year and with a click on the pull down menu of the actual day you can open a calendar and change the time by clicking on another day or month.

Fig. Total flow day diagram

On this screen you find the totalizer value for one day in one hour time frame with indication of the maximum consumption value written on the top including date and time.

You can use the cursor and the left and right buttons as for the flow diagram to change the day or cursor position.

You can print this graphic by clicking on the printer button or close this window by pressing the Main Menu button.

For a time frame of calendar week which starts with the first week 01 after new year example 2001 and will be written as CW 01/2001 and the next week is CW 02/2001 and so on unit you reach end of the year which is week CW 52/2001.
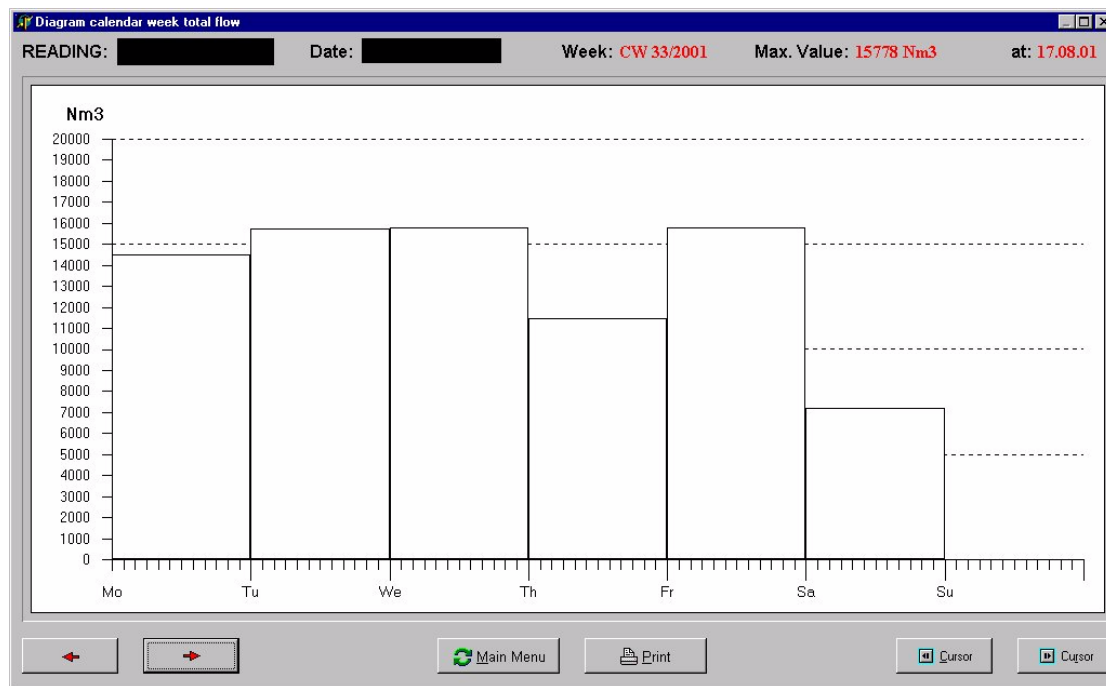
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Fig. Total flow week diagram

For the week diagram you will see the total consumption of each day (Monday to Sunday) in this week for one selected unit. With the left and right button you can move to an older or younger calendar week and the cursor will indicate the total flow of each day.

For the month diagram you will see the total consumption of each day of this month (1 to maximum of 31 days) for one selected unit. With the left and right button you can move to another month and the cursor will indicate the total flow of each day.

For the year diagram you will see the total consumption of each month (January to December) in this year for the selected unit. With the left and right button you can move to another year and the cursor will indicate the total flow of each month.

11.0 Group consumption

In the group view you find the header the button "Consumption" by pressing this button and the selection of one group (1..8) with the hand pointer symbol in the button line with the mouse the following window will be open:

Fig. Group consumption calculation for Group #1

Now you can change the Start and Stop date with the pull down calendar (example: Start date 01. July 2001 and Stop date 31. July 2001) and press calculate so that you find the total consumption of all units in this group for this period and the total amount price according your pre set price current factor. You can also use the Print button to print all values of the unit which are in this group and the total consumption with price current factor and the total amount. You can close this window with the Group button and select if necessary another group with your mouse pointer.

Date: August 2001
-- End of Manual ---