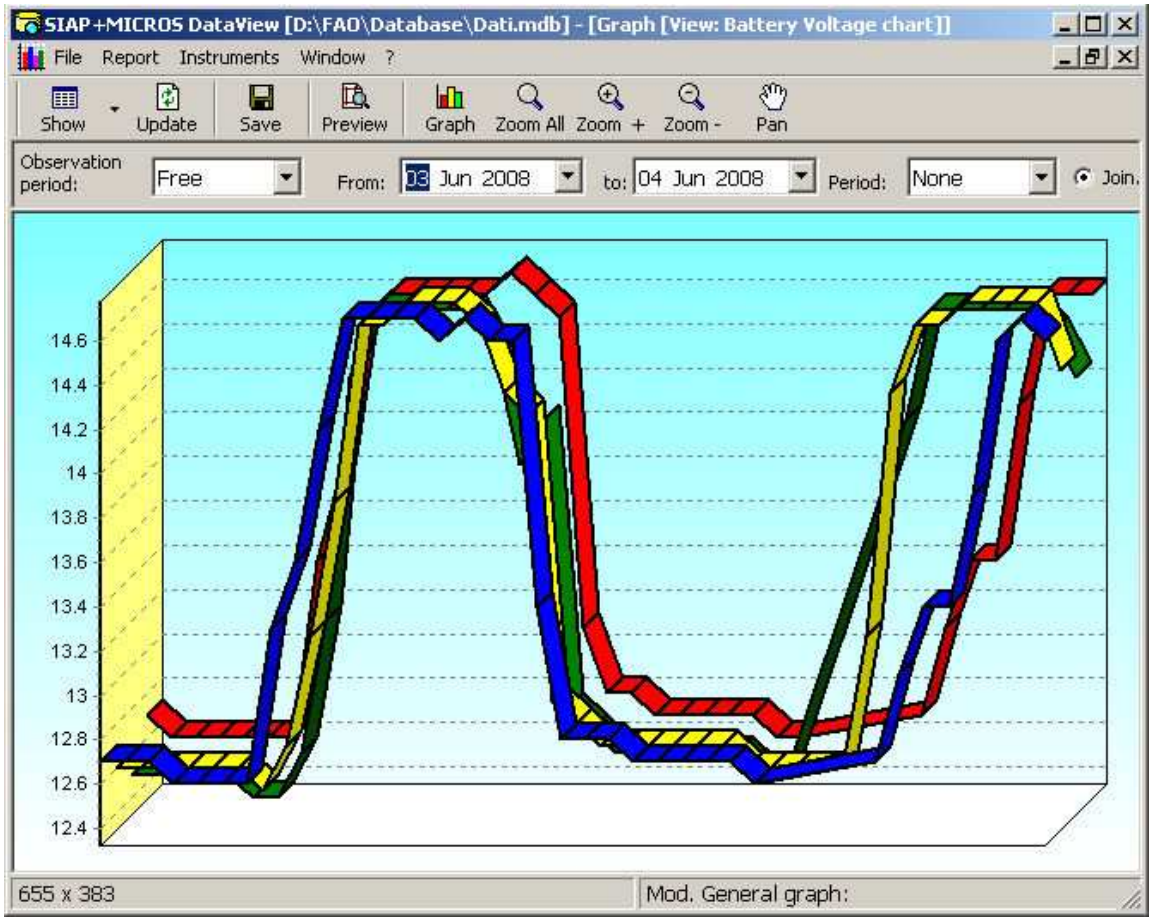
s032-05 DataView

Reports and graphs generating software

Users manual (vers. 5.11)



SIAP+MICROS S.r.l.
Via del Lavoro,1
I – 31010 – Castello Roganzuolo
di San Fior (TV)
tel +39 0438 491411 – fax +39 0438 401573
email info@siapmicros.com
www.siapmicros.com

Summary

Linked documentation

s011-i *DYNAMIC RECORDs - Dynamic records layout description*

s032-01-di *SUPERVIS - Monitoring/remote controlling supervision networks software*

s032-02-di *GESTCONF- Configuration management program manual*

s032-03-di *IMPORTA - Relational database data import management program manual*

s032-04-di *VALIDA - Data validation management program manual*

1 Introduction

1.1 Document purpose

The purpose of this document is to provide a description of the functions and characteristic of ***DataView*** software, that allow a complete and serviceable management of database acquired by acquisition data monitoring station Siap+Micros. ***DataView*** software package interfaces with RBDMS that looks after acquired data buffering on disk, providing the user with necessary instruments for their management through statistical processing functions and their representation in tabular form (report) and/or graphical (graphs).

2 Software 'DataView' Installation

DataView software is included in Meteonet LT installation.

Before proceeding with the package software installation, verify that the calculator whereby the installation will occur, has the following Hardware requirements available:

- **Pentium** Microprocessor or higher.
- **16 Mbyte** of memory **RAM** or higher.
- **Hard Disk** with capacity of at least of **1 Gbyte** or higher (in terms of the amount of data to manage)
- CD reader.
- Graphic board **VGA** o **SVGA**
- Microsoft Windows™ 95, 98, NT, 2000, XP, 2003 operating system.

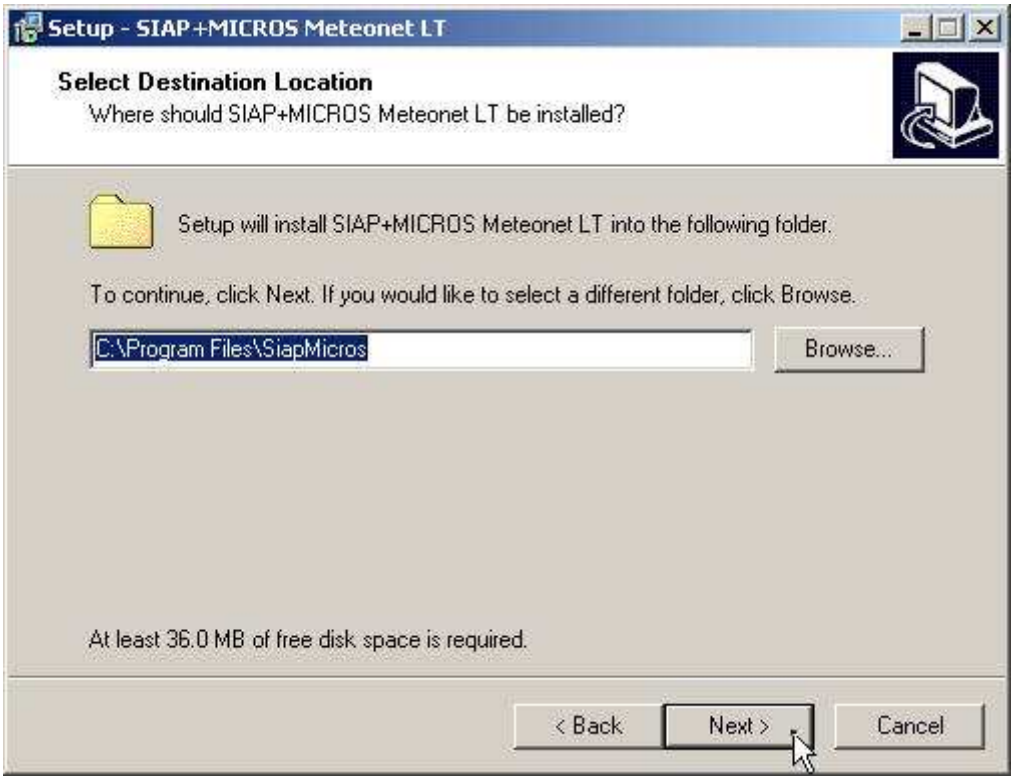
Software package has been tested with a calculator that has the previous characteristics available, therefore a calculator with lower characteristics will not guarantee the correct working operation.

To proceed with the installation follow the indication below:

- Insert disk in the cd reader;
- From the toolbar choose Starting / Run;
- type: **SETUP.exe** in the command line of the window that appears;

- click **'OK';**
- follow the instructions appearing on the video.

Installation program require confirmation of the directory and disk unit where to install the software displaying the following window:



By default it will proposed the installation of the "C:\Programmi\SiapMicros \" directory, but it is possible to install the software in another position rewriting the name of the directory the disk unit in the space provided. To proceed click **"Next"** or **"Cancel"** to quit the installation.

Package modules are preconfigured to access to Microsoft Access database, created during the installation phase and situated in the C:\programmi\siapmicros\database folder.

If the user chooses a destination folder different from the one indicated he will have to change configuration files of the single modules.

2.1 Installed files list

The installation program copies the entire METEONET software package files from the disks inserting them in the specified directory of the following list:

copied files in directory <INSTALLDIR>\Supervis

SMSServer95.exe	TranscodificaAnaCEMI2.txt	cRas.dll
VisLog95.exe	TranscodificaAnaCEMI3.txt	GestAllarmi95.exe
TranscodificaHIst.txt	TranscodificaDigCEMI1.txt	SNS3820Per3840.txt
TranscodificaH2.txt	TranscodificaDigCEMI2.txt	IdMis.txt
TranscodificaH6.txt	TranscodificaAnaCEMI1.txt	SNS3820.txt
TranscodificaH1.txt	ConvertitoreCemi.exe	CM5800FE.Ini
CConfPico.dll	msscript.ocx	Supervis.ini
USafe32.DLL	scrrun.dll	IdMis3820.txt
Sx32w.dll	Script.bas	Supervis.exe
TranscodificaStzCEMI.txt	GestImage.exe	Cm5800FE.dll
TranscodificaDigCEMI3.txt	converter.dll	

copied files in directory <WINSYSDIR>

MSVBVM60.DLL	MSTEXT35.DLL	Ntsvc.ocx
STDOLE2.TLB	MSXBSE35.DLL	Msinet.ocx
OLEAUT32.DLL	TABCTL32.OCX	scrrun.dll
OLEPRO32.DLL	COMCAT.DLL	TAPIExCt.dll
ASYCFILT.DLL	TabCtlT.dll	VsVIEW3.ocx
VB6IT.DLL	MSCOMM32.OCX	Sscala32.ocx
MSJET35.DLL	MSComIT.dll	MSADODC.OCX
MSJTER35.DLL	MSFLXGRD.OCX	MSStdFmt.dll
MSJINT35.DLL	FlxGdIT.dll	adodcIT.dll
VBAJET32.DLL	MSCOMCTL.OCX	MSDATGRD.OCX
VBAR332.DLL	MSCmCIT.dll	DatGdIT.dll
MSRD2X35.DLL	MSADODC.OCX	COMDLG32.OCX
MSREPL35.DLL	MSStdFmt.dll	MSWINSCK.OCX
MSVCRT40.DLL	adodcIT.dll	MSCOMCT2.OCX
VB5DB.DLL	MSDATGRD.OCX	teechart.ocx
EXPSRV.DLL	DatGdIT.dll	wodSFTP.ocx
MSEXCL35.DLL	msbind.dll	RICHTX32.OCX

copied files in directory <CommonFilesDir>\Microsoft Shared\DAO

DAO350.DLL	DAO2535.TLB

copied files in directory <INSTALLDIR>\Configurazione

USafe32.DLL	GestConf.ini	ScriptCreazioneDBImmagini.sql
Sx32w.dll	SQLUpgrade2.0To5.11.0.sql	ACCUpgrade2.0To5.11.0.sql
GestConf.exe	ScriptCreazioneDBAllarmi.sql	ModemInit.txt
CConfSvr.dll	ScriptCreazioneDBCNF.sql	
CSMS_Gate.dll		

copied files in directory <INSTALLDIR>\Importa

USafe32.DLL	codcm4000.ini	CM4000.dll
Sx32w.dll	codmma.ini	Importa.ini
CRecentDataSvr.dll	CImportaDati.dll	
Importa.exe	CM4000.exe	

copied files in directory <INSTALLDIR>\DataView

USafe32.DLL	RosaVenti.exe	DataView.exe
Sx32w.dll	TEEUSERX.HLP	DataView.ini
RosaVenti.INI	CDataView95.dll	

copied files in directory <INSTALLDIR>\Database

Immagini.mdb	Dati.mdb
Cnf.mdb	Allarmi.mdb

2.2 System architecture

DataView application uses two buffering data structures:

- a configuration database,
- a measures database,

which could be reached through *'data supplying objects'*.

Utilization of '*data supplying objects*' essentially supplies two advantages

- make the application independent from any type of database used,
- improve network application performance.

Configuration database contains information relating to the monitoring station register, measure parameters, data download time scheduling, users and their availability.

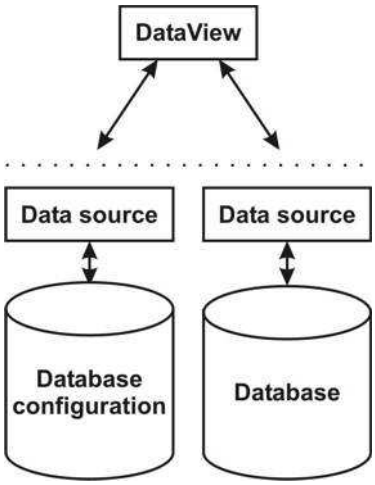
Measure database contains all data coming from.

All package modules are preconfigured to access to Microsoft Access database, created during installation phase and located in C:\programmi\siapmicros\database folder.

Database have the following nomenclature:

CONFIGURATION	Cnf.mdb
DATA	Dati.mdb
ALLARMS	Allarmi.mdb

To change database names or to use SQL_SERVER database necessary to change DataView .ini file.



2.3 'DataView.ini' configuration file

'DataView.ini' configuration file, present in the installation directory, is created while starting the application.

Configuration file is used to store series of information such as:

- database paths
- path programs invoked DataView
- user customization

Configuration file is divided into 'sections'; section name is contained between square brackets.

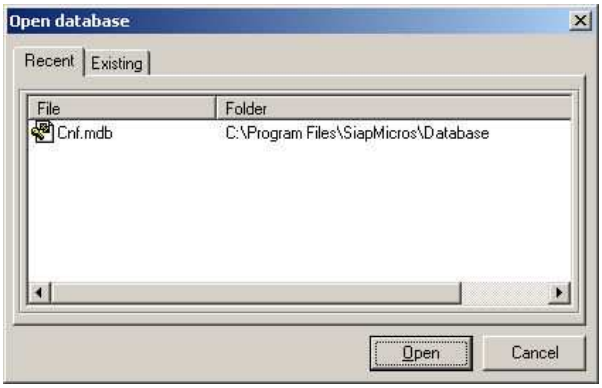
Every section contains a series of lines whereby the left side of '=' symbol represents the label, while the right side makes up the value.

3 Starting DataView

Starting **DataView** (double click on the icon) opens the main window type *MDI* (Multiple Document Interface), DataView will then load the configuration and create a connection to database.

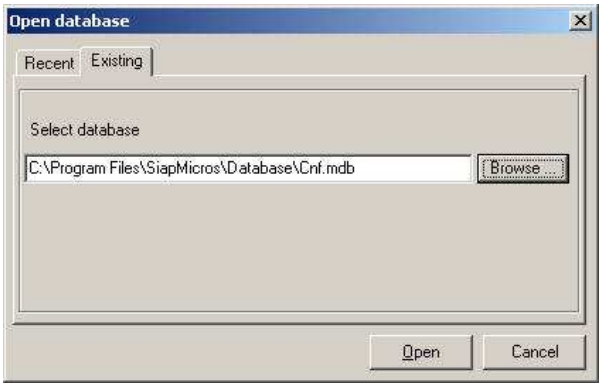
To open a new database is necessary to close current database selecting 'Close' from menu 'File'. (All reports and graphs contained in the main window are closed automatically.)

To connect to measure database select file and click 'Open'.



It is possible to add a new name to database in the recent file list using the following procedure:

- select tab strip 'Existing'



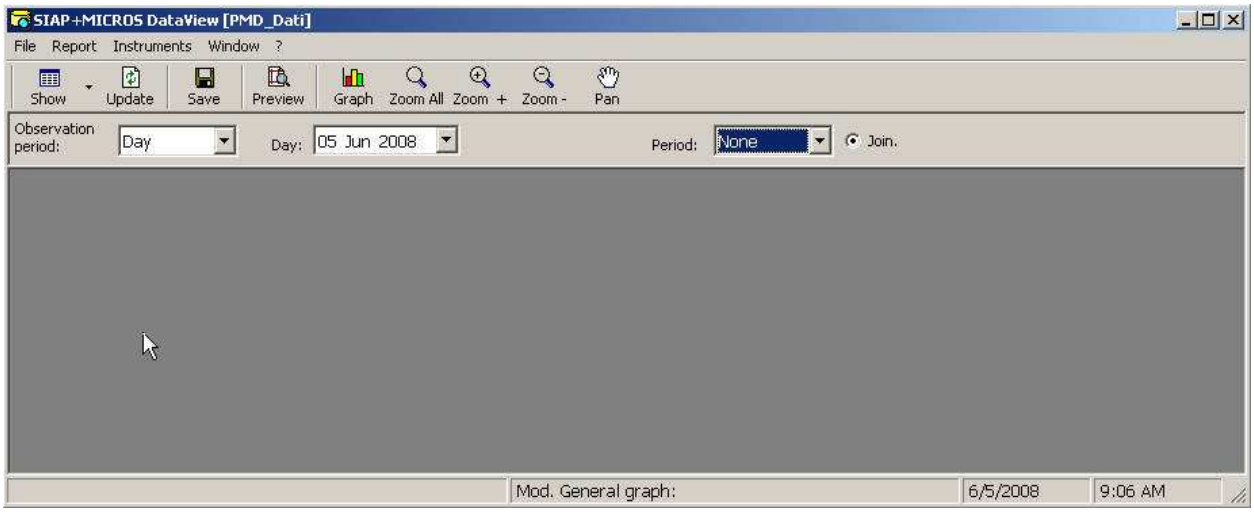
- Click 'Browse' which displays the window which asks to user to set up name and path file of the *DATABASE* to open:
- Set up name and path of the database and click 'Open'.

New file name will be stored in 'DataView.ini' file; next time you start the program it will be possible to select last database from file menu or from a list of recent files.

Note. In menu file are listed only the last 4 files, while recent file list foresees to a maximum of 10 files.

4 Data presentation

The main DataView window is the following.



It is possible to access to all functions application through menu; main functionalities are summarized in the bar buttons below which allow to access quickly with least effort to the most often used functionalities.

Under toolbar is present a bar in which it may be found observation period selection, start date settings, final date settings, aggregation type and if necessary the filter that will be applied to report.

Observation period choice display/remove final date selection in particular:

- **Free** :it allows to plan both start date analysis and end date analysis
- **Day** :it allows to plan only the day of analysis
- **Week** :it allows to plan start date analysis while end date analysis is calculated automatically
- **Month** :it allows to plan only the month of analysis
- **Trimester** :it allows to plan start date analysis while end date analysis is calculated automatically
- **Semester** :it allows to plan start date analysis while end date analysis is calculated automatically
- **Year** :it allows to plan only the year of analysis

Possible aggregation types are:

None: it allows to display the present data on DataBase as they are recorded that is with their authentic date and hour

1 hour: aggregated data view in hourly intervals

24 hours: aggregated data view per day

1 Month : aggregated data view per month

In some parameter such as: RAIN or WIND DIRECTION aggregation reserves a particular treatment. In case of rain numbers displayed are stored values while for data relating to wind directions, carried out averages are of trigonometric type..

Aggregation type to execute on data is defined by a statistical code present in configuration database.

Possible filter types are:

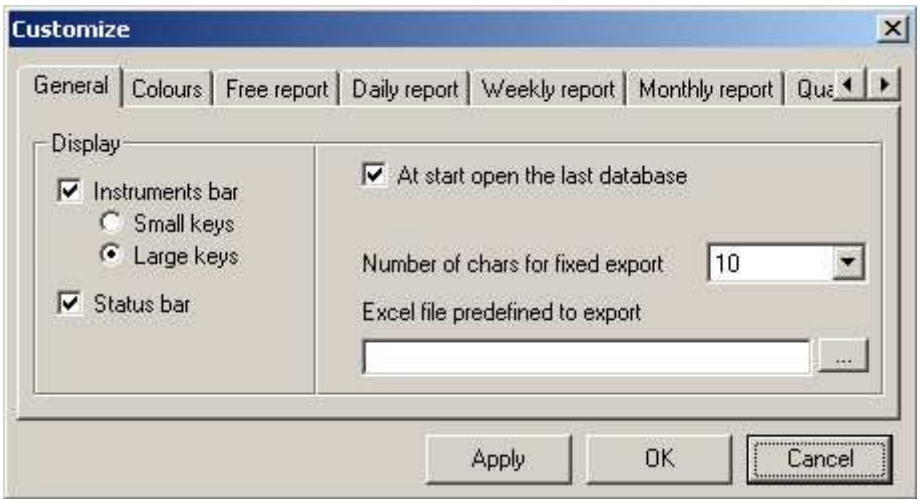
None: allows to display data present on Database such as they are recorded

1, 2, 5, 10, 15, 30 minutes: filters memorized data in selected minutes

1, 2, 3, 6, 12, 24 hours: filters memorized data in selected hours

It is possible to customize main window following next procedure:

- choose 'Customize' from menu 'Tools'; it will appear following window
- choose the tab strip 'Screen'



- change settings and click 'Apply' to display them
- click 'OK' to make them definitive for the following start up or 'Cancel' to undo

Dataview application gives the possibility to creates the following type of report:

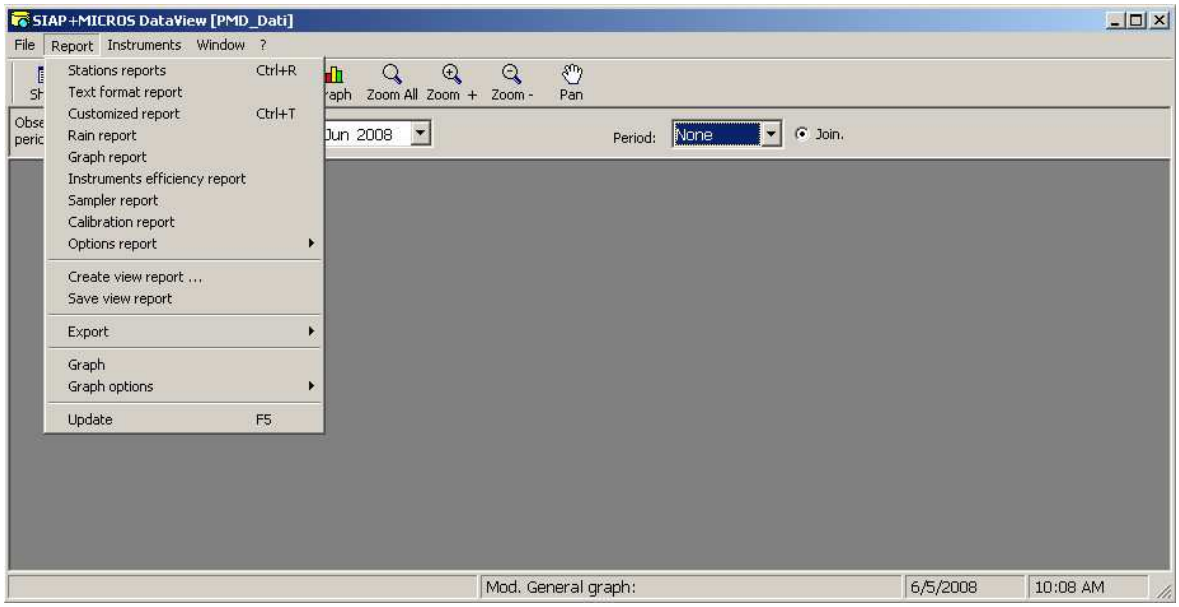
- stations reports
- crossed fields report
- customized report
- text format report
- graphic report
- performance report
- calibration report
- sampler report

4.1 Stations reports

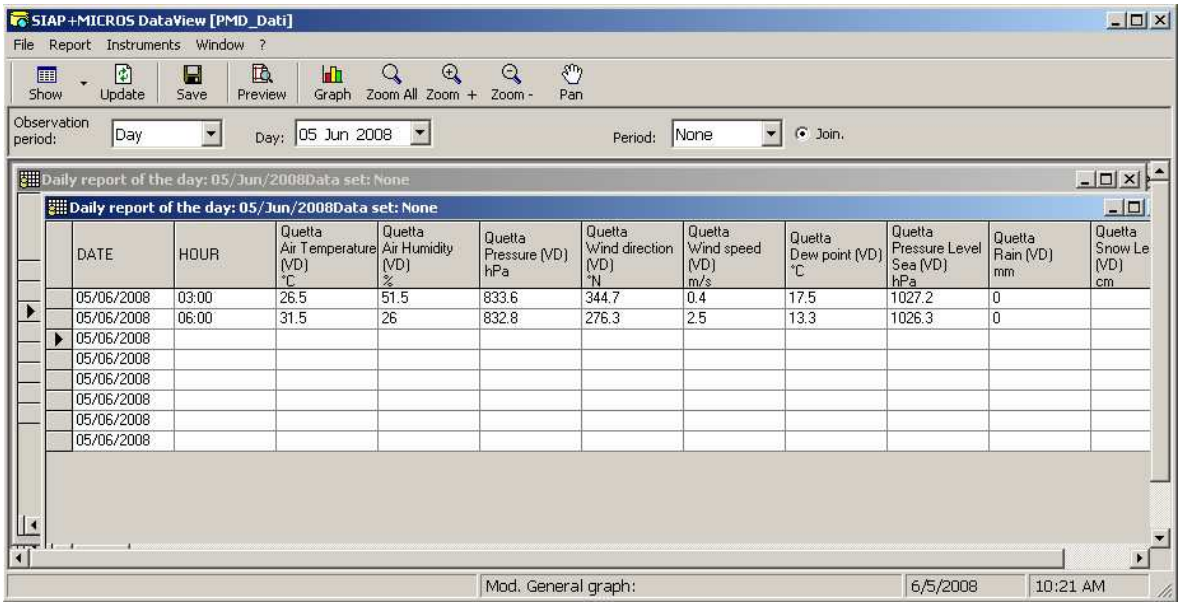
Stations report creates a series of data window as many as stations.

To create stations report follow the next procedure:

- Set up observation period, starting data, if necessary final data and the type of aggregation on data.
- Press CTRL+R or choose 'Station reports' form menu 'Report' or select 'Station reports' of 'Show' button 



Every report listed all measures relating to the same station.



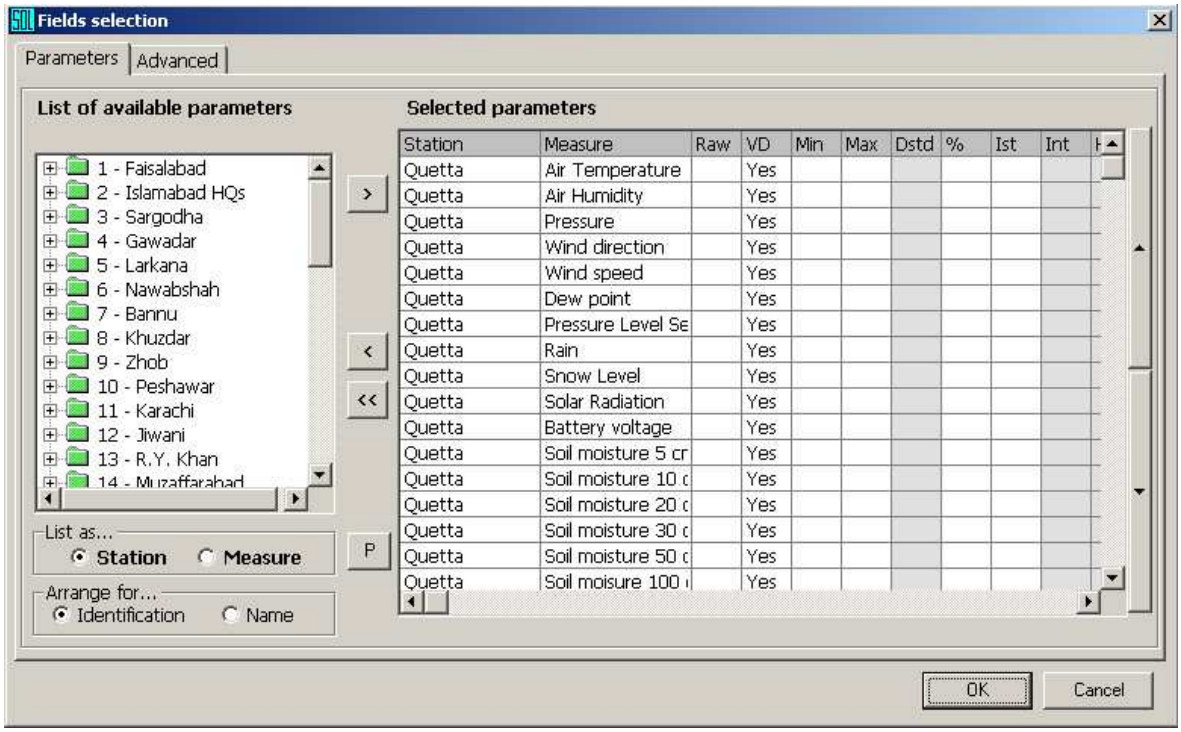
4.1.1 Report options

It is possible, once displayed a report, apply a different setting of observation and aggregation period or following the same procedure:

- select wanted report ;
- press F5 key or 'Refresh from report menu.

It is possible to add, remove or shift report columns following the next procedure:

- select wanted report;
- press right key and select 'Selection parameters' (another option is to press CTRL+P); it appears following window where left square, tree structured, lists measures of every station, while right square lists selected parameters.



In the selected parameters square there are besides the name of the station and measure also other columns which have the following meaning:

Gre: it represent raw data of measure recorded by stations

Med: it represents il medium or statistical data and it the result of raw data validation

Min: it represents minimum data measure recorded by stations

Max: it represents maximum data measure recorded by stations

Sig: it represents standard devistion measure recorded by stations

Perc: it represents the percentage of valid data measure recorded by stations

Ist: it represents instantaneous data measures recorded by stations

Int: it represents integral data measures recorded by stations

Note. The symbol of station/measure can appear **green**, **yellow**, **red color** corresponding to the **on line status**, **arrange**, **out line** of station/measure.

Operations on the square of selected parameters:

- double click on station or measure to erase or select the measure and click the ‹ push button,
- double click on raws column (the same for Min.Max,Sig,Perc) to insert/remove raw data of all raws data measures,
- double click in a single square to insert/remove single measure,
- click the << push button to erase selected parameters list,
- select measure and the scroll-arrow keys UP/DOWN' on the left of square to shift colums view order.

Available parameters square has a tree structure which contents depend on view option:

- list per station (main nodes are measures, secondary nodes are station measures)
- list per measure (main nodes are measures, secondary nodes are the stations which have encoded the measure)

Note. In some sistems typologies it may be besides the possibilty to extract informations from three typologies of archive

- **Free** extract informations from start archive
- **1 hour** extract informations from archive created during validation process in which data are aggregated per hour
- **24 hours** extract informations from archive created during validation process in which data are aggregated per hour per day

Operations on the square of available parameters:

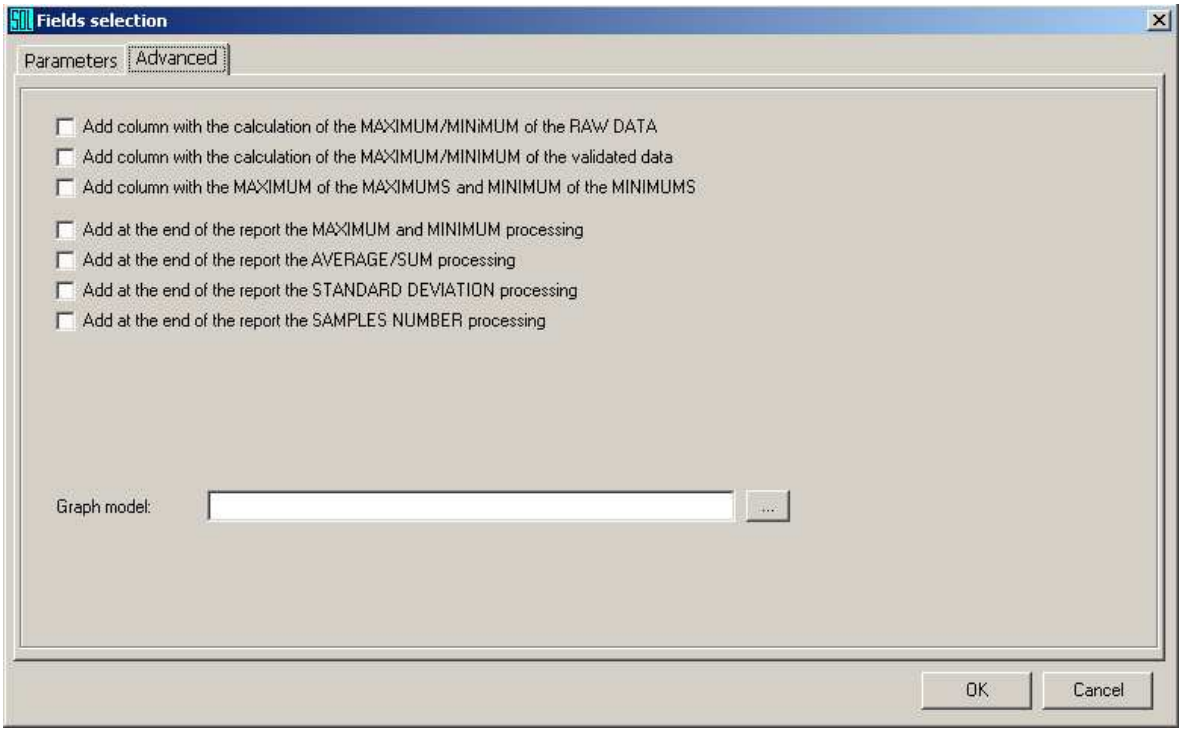
- double click on primary node to insert all secondary nodes(alternatively select the main node and click › push button),
- double click on secondary node to insert the single element (alternatively select the main node and click › push button).

Note: in station reports is possible to insert only parameters of one station

Advanced processing of selection:

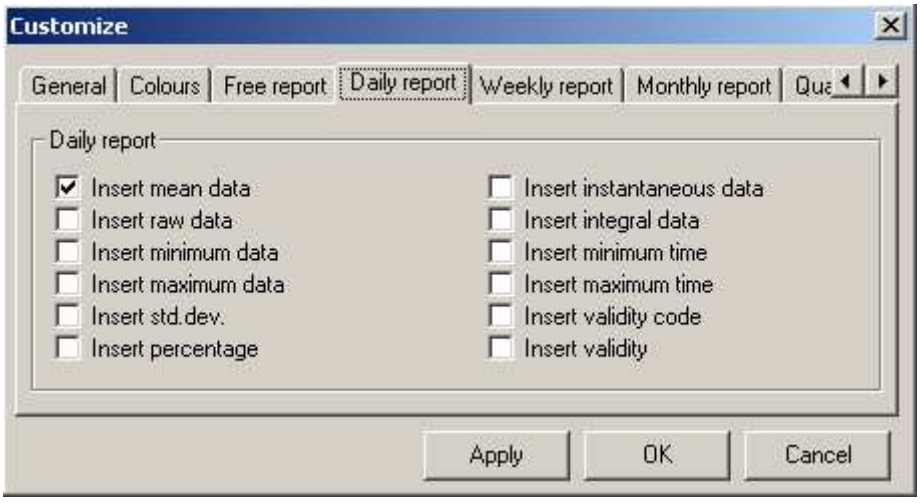
In advanced selection is possible to select some view operations:

- insertion at the end of report processing of SAMPLES NUMBER, STANDARD DEVIATION, MEAN/ADDITION, MAXIMUM and MINIMUM
- Iinsertion of new columns with statistical data calculation to apply when aggregation is distinct from 'NONE'



By default settings all reports at the beginning have only preselected mean data; is possible to change such setting with the following procedure.

- choose 'Customize' from menu 'Tools'; it will appear the following window
- choose the tab strip related to wanted report



- change settings
- click 'OK' to make them definitive also for the next starting or 'Cancel' to cancel

Note. Exist a limitation in parameter selection which depends on database administrator (DBMS).

It is possible to change character report following the next procedure:

- select wanted report;
- press the right key and select ‘Character’.

It is possible to add a division in the report, to improve readability in presence of many columns, clicking on the corner down left of the grid next to the cursor 

To erase divisions from report follow the next procedure:

- select wanted report;
- press the right key and select ‘Remove divisions’.

Besides it is possible to display/hide, for each report, a summary window with the following procedure:

- select wanted report;
- press the right key and select ‘View summary.

Summary window reports statistical synthesis measures calculated in selected time interval:

Data number: extracted record total

Mean: mean value of measure (it has mean only to measures which has as statistical code the arithmetic mean or trigonometric mean)

Minimum: minimum value of measure (it has mean only to measures which has as statistical code la the arithmetic mean)

Maximum: maximum value of measure (it has mean only to measures which has as statistical code the arithmetic mean it has mean only to measures which has as statistical code the arithmetic mean)

Addition: value of total accumulated measure (it has mean only to measures which has as statistical code the accumulated for example the RAIN)

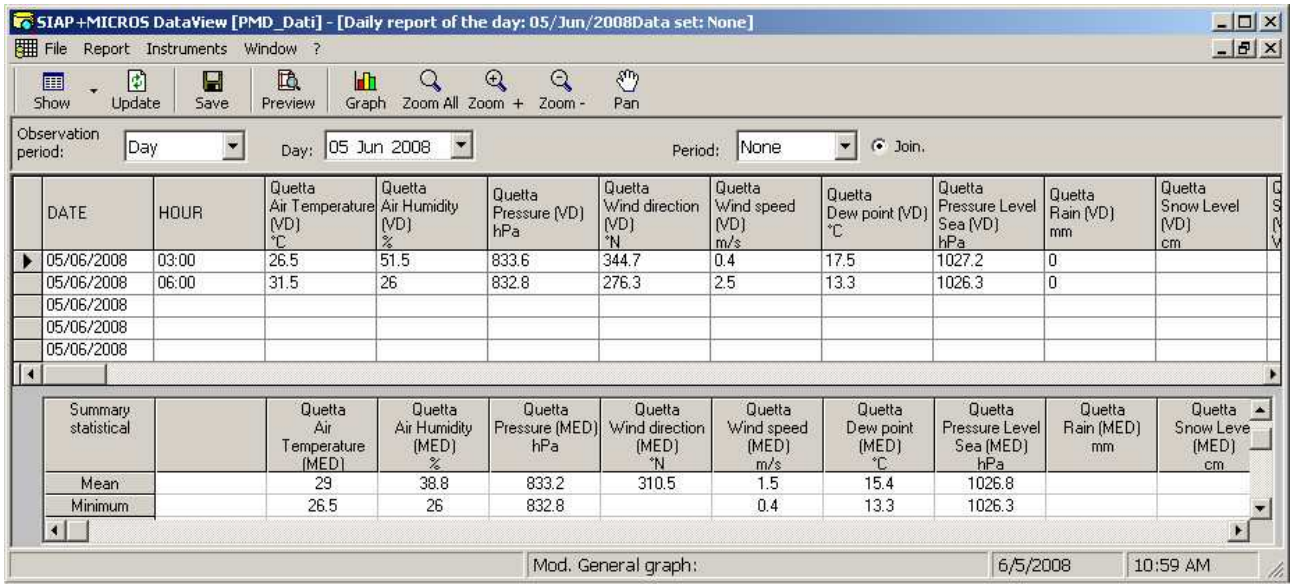
Tendency: is present only for daily report and can takes on following values

- >> mean value of selected day is major compared with the 3 previous days mean
- == mean value of selected day is equal compared with the 3 previous days mean
- << mean value of selected day is minor compared with the 3 previous days mean

Dev.standard: standard deviation measure

Median: standard deviation measure

N.Percentile: nth percentile value (percentile value can be set up)

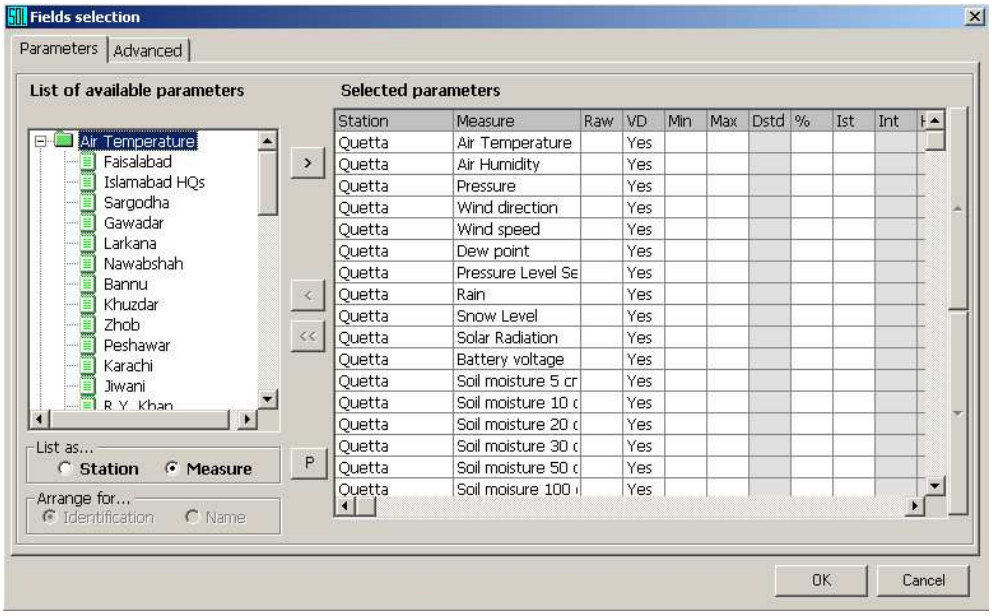


4.2 Customized reports

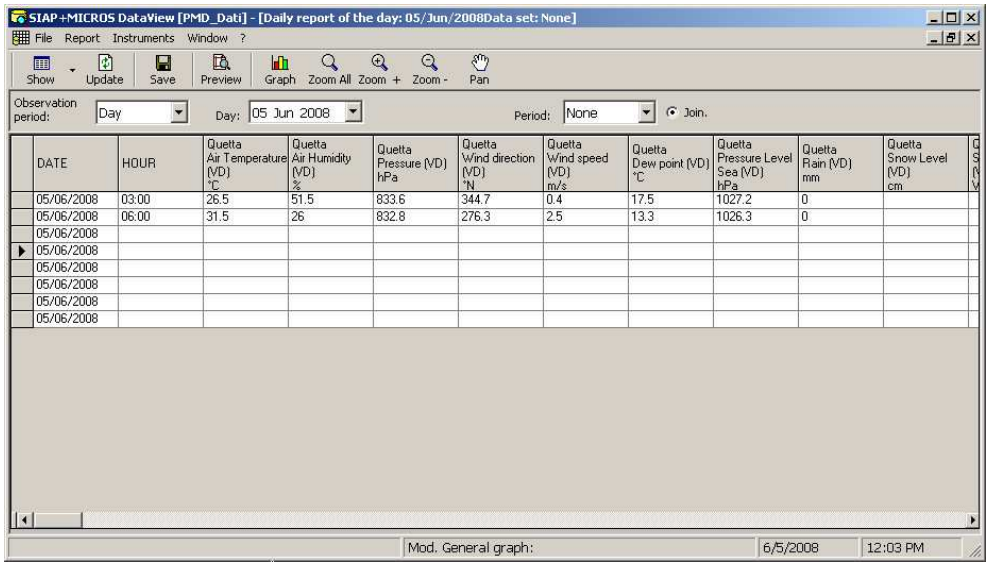
Customized report allows to display in the same reports information related to more stations

To create a customized report follow the next procedure:

- set up observation period, start date, if necessary end date and aggregation types on data.
- select 'Customized report' from menu 'Report' or from 'Show' button; it appears selection parameters window already described in Report Options paragraph.
  The difference between customized report and stations report is that with the first you can select one or more than one measures or more stations.
  For example it is possible to select chemical measures of all stations.



- Click 'OK' to create the report. (The following picture shows an example of customized reports related to previous window selection).

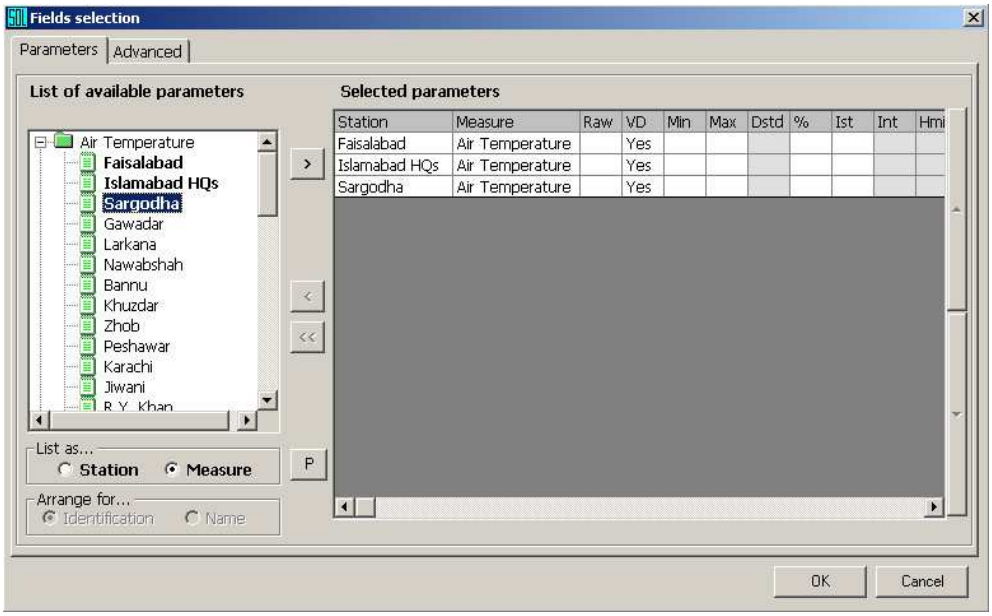


4.3 Graphic report

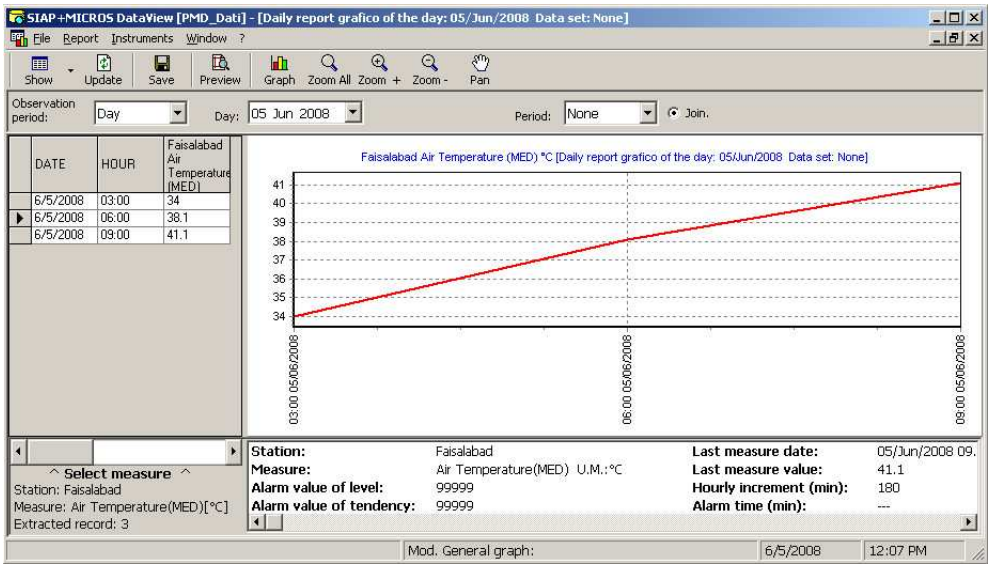
Graphic report allows to display in the same window data and related graph.

To cerate a graphic report follow the next procedure:

- set up observation period, start date, if necessary end date and aggregation types on data.
- select 'Graphic report' from menu 'Report' or from 'Show' push button; it appears selection parameters window already described in Report Options paragraph.
  As for customized report there is the possibility to select one or more than one measures or more stations.
  For example it is possible to select chemical measures of all stations.



- Click 'OK' to create the report. (the following picture shows an example of customized reports related to previous window selection).



On the left side of the window are displayed data related to a parameter; a cursor below allows to run all selected parameters with the previous dialog window.

On the right side of the window is displayed the graph related to the selected parameter; a box below shows a more significant values synthesis (last measure value, overflow alarm time…).

To the graphic report are valid options desribed in paragraph ‘Report options’ described before and ‘Graph options’ described after that.

It is besides possible to save the customized report view and the graphic reprt view with the following procedure:

- Select ‘Save report view’ from menu ‘Report’ or the ‘Save’ push button; it appears the following window:

- Type a significant name for the view and click ‘OK’ to on configuration database.
  In the view are saved selected fields list and aggregation type on data; is excluded analysis interval.

It is possible to recall view with the following procedure

- select ‘Creating report from view…’ from menu ‘Report’; it appears the following window:

- select view and click ‘OK’ to display.
- click OK to display, ‘Erase’ to delete, ’Cancel’ to quit.

Report analysis interval created by view is the one set up on main window bar.

4.4 Crossed fields report

Crossed fields report allows to display the typical day, typical week and typical month.
Such report presents a different structure from customized report and from stations report.
Report is related to a measure of one station and headings column are dependent from used aggregation type.

It is possible to create a crossed field report only in following cases:

- the observation period is month and aggregation type is '1 hour'

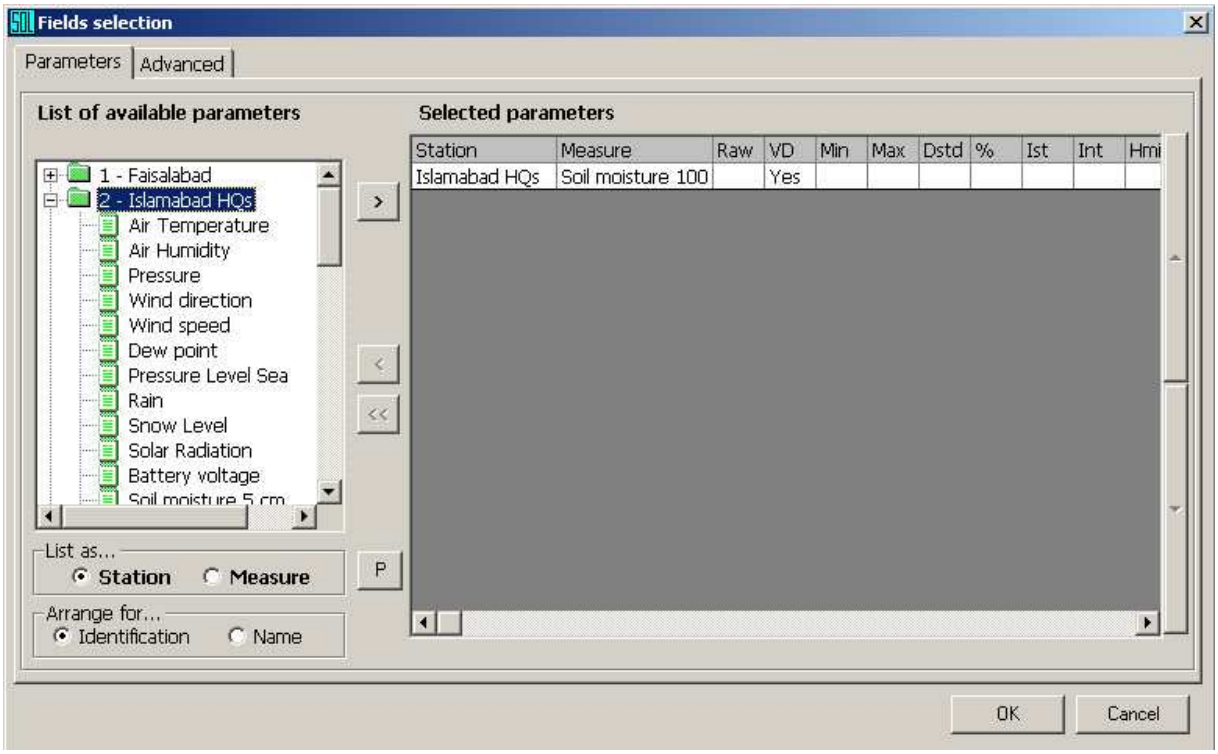
  (headings column are hours of the day while lines are the days of month)

- the observation period is year and aggregation type is '24 hours'

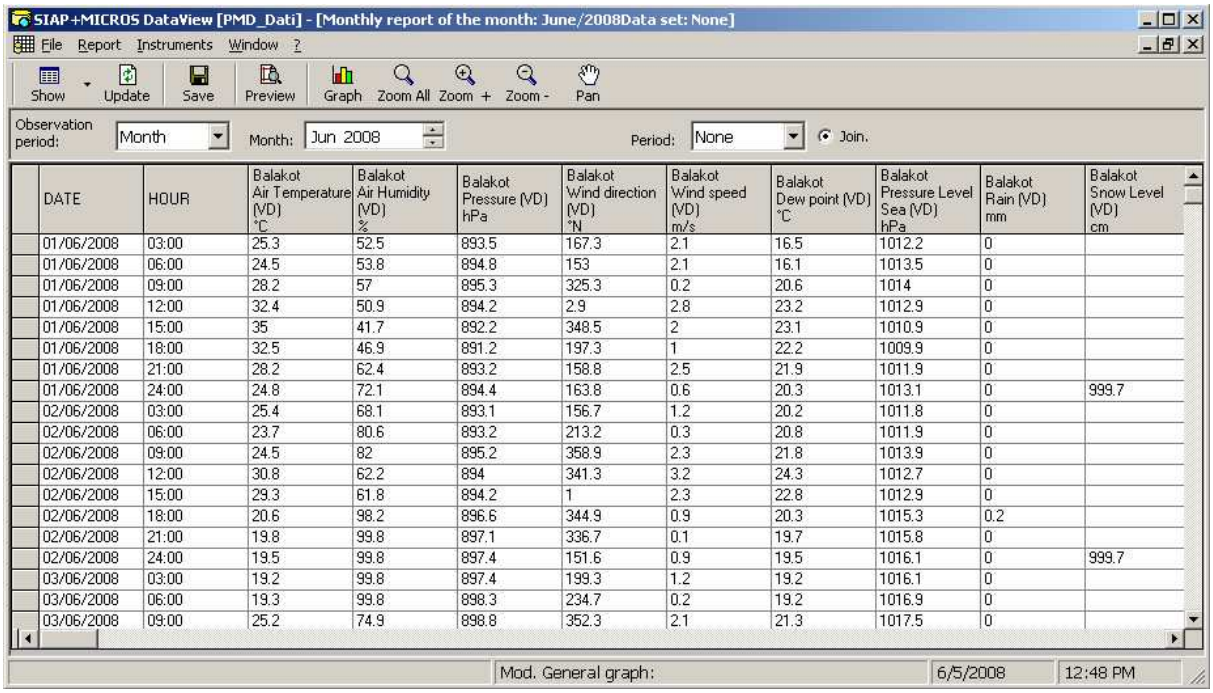
  (headings column are months of year while lines are the days of month)

To create a customized report follow the next procedure:

- set up observation period, start date, if necessary end date and aggregation type on data.
- select 'Crossed fields report' from menu 'Report' or from 'Show' button; it appears selected parameters window already described in Report options paragraph.
  It is possible to select one or more measures of one or more stations.

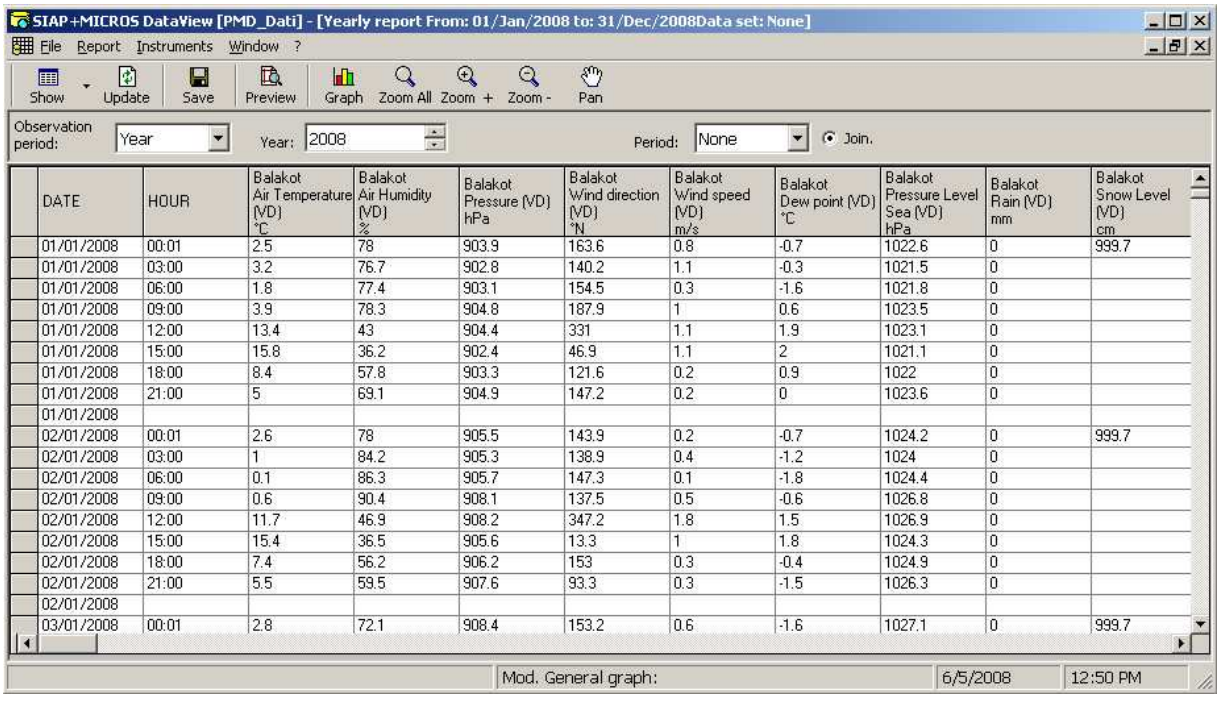


- click 'OK' to create all selected measures reports. (following illustrations show an example of crossed fields report related to previous window selection).



DATE	HOUR	Balakot Air Temperature (VD) °C	Balakot Air Humidity (VD) %	Balakot Pressure (VD) hPa	Balakot Wind direction (VD) °N	Balakot Wind speed (VD) m/s	Balakot Dew point (VD) °C	Balakot Pressure Level Sea (VD) hPa	Balakot Rain (VD) mm	Balakot Snow Level (VD) cm
01/06/2008	03:00	25.3	52.5	893.5	167.3	2.1	16.5	1012.2	0	
01/06/2008	06:00	24.5	53.8	894.8	153	2.1	16.1	1013.5	0	
01/06/2008	09:00	28.2	57	895.3	325.3	0.2	20.6	1014	0	
01/06/2008	12:00	32.4	50.9	894.2	2.9	2.8	23.2	1012.9	0	
01/06/2008	15:00	35	41.7	892.2	348.5	2	23.1	1010.9	0	
01/06/2008	18:00	32.5	46.9	891.2	197.3	1	22.2	1009.9	0	
01/06/2008	21:00	28.2	62.4	893.2	158.8	2.5	21.9	1011.9	0	
01/06/2008	24:00	24.8	72.1	894.4	163.8	0.6	20.3	1013.1	0	999.7
02/06/2008	03:00	25.4	68.1	893.1	156.7	1.2	20.2	1011.8	0	
02/06/2008	06:00	23.7	80.6	893.2	213.2	0.3	20.8	1011.9	0	
02/06/2008	09:00	24.5	82	895.2	358.9	2.3	21.8	1013.9	0	
02/06/2008	12:00	30.8	62.2	894	341.3	3.2	24.3	1012.7	0	
02/06/2008	15:00	29.3	61.8	894.2	1	2.3	22.8	1012.9	0	
02/06/2008	18:00	20.6	98.2	896.6	344.9	0.9	20.3	1015.3	0.2	
02/06/2008	21:00	19.8	99.8	897.1	336.7	0.1	19.7	1015.8	0	
02/06/2008	24:00	19.5	99.8	897.4	151.6	0.9	19.5	1016.1	0	999.7
03/06/2008	03:00	19.2	99.8	897.4	199.3	1.2	19.2	1016.1	0	
03/06/2008	06:00	19.3	99.8	898.3	234.7	0.2	19.2	1016.9	0	
03/06/2008	09:00	25.2	74.9	898.8	352.3	2.1	21.3	1017.5	0	

Example of crossed fields monthly report



DATE	HOUR	Balakot Air Temperature (VD) °C	Balakot Air Humidity (VD) %	Balakot Pressure (VD) hPa	Balakot Wind direction (VD) °N	Balakot Wind speed (VD) m/s	Balakot Dew point (VD) °C	Balakot Pressure Level Sea (VD) hPa	Balakot Rain (VD) mm	Balakot Snow Level (VD) cm
01/01/2008	00:01	2.5	78	903.9	163.6	0.8	-0.7	1022.6	0	999.7
01/01/2008	03:00	3.2	76.7	902.8	140.2	1.1	-0.3	1021.5	0	
01/01/2008	06:00	1.8	77.4	903.1	154.5	0.3	-1.6	1021.8	0	
01/01/2008	09:00	3.9	78.3	904.8	187.9	1	0.6	1023.5	0	
01/01/2008	12:00	13.4	43	904.4	331	1.1	1.9	1023.1	0	
01/01/2008	15:00	15.8	36.2	902.4	46.9	1.1	2	1021.1	0	
01/01/2008	18:00	8.4	57.8	903.3	121.6	0.2	0.9	1022	0	
01/01/2008	21:00	5	69.1	904.9	147.2	0.2	0	1023.6	0	
01/01/2008										
02/01/2008	00:01	2.6	78	905.5	143.9	0.2	-0.7	1024.2	0	999.7
02/01/2008	03:00	1	84.2	905.3	138.9	0.4	-1.2	1024	0	
02/01/2008	06:00	0.1	86.3	905.7	147.3	0.1	-1.8	1024.4	0	
02/01/2008	09:00	0.6	90.4	908.1	137.5	0.5	-0.6	1026.8	0	
02/01/2008	12:00	11.7	46.9	908.2	347.2	1.8	1.5	1026.9	0	
02/01/2008	15:00	15.4	36.5	905.6	13.3	1	1.8	1024.3	0	
02/01/2008	18:00	7.4	56.2	906.2	153	0.3	-0.4	1024.9	0	
02/01/2008	21:00	5.5	59.5	907.6	93.3	0.3	-1.5	1026.3	0	
02/01/2008										
03/01/2008	00:01	2.8	72.1	908.4	153.2	0.6	-1.6	1027.1	0	999.7

Example of crossed fields yearly report

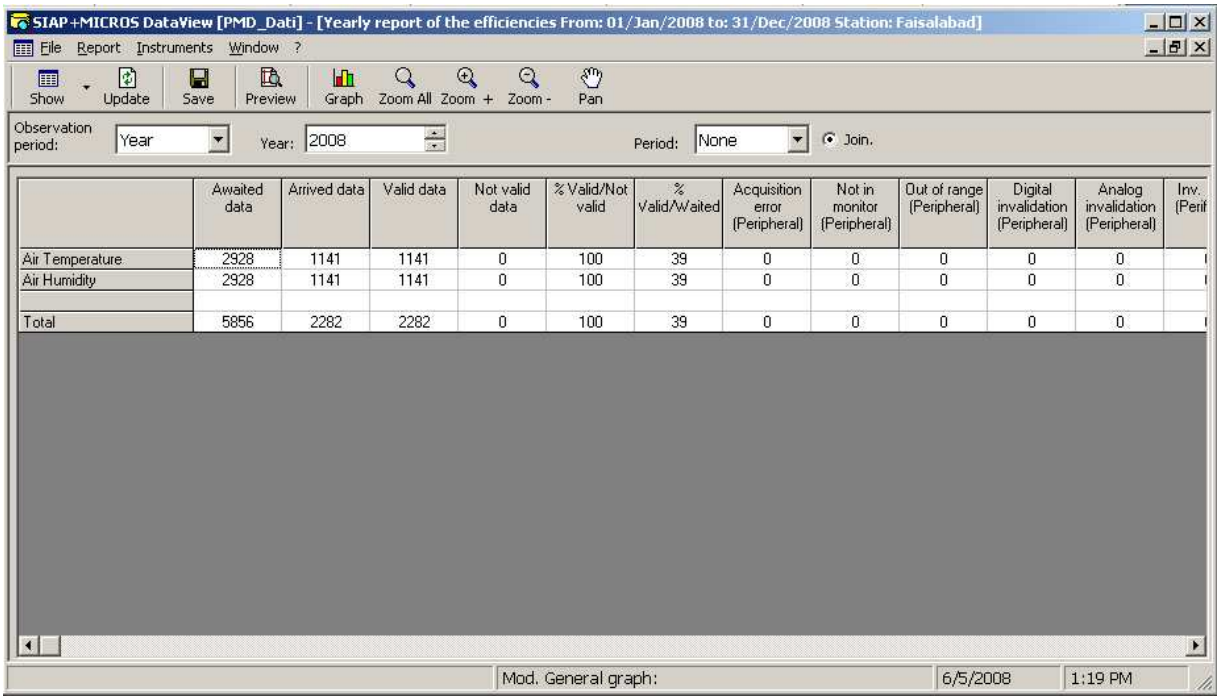
Options decribed at ‘Report options’ are valid for crossed fields report execpt for possibilty to set up again parameters selection which is disabled.

4.5 Tools report

Instruments report contains information on quantity and quality of arrived data; report is related to one or more measures of one station.
Report carries on for every selected measure the quantity of waited data, quality of arrived data, valid data, not valid data, mean of valid data upon not valid data, mean of valid data upon waited data.
Quantity of waited data is calculated using settings of reception cadence data set up in registry station.
About not valid data are highlighted explanations of invalidation differentiating cases in which it is happened at level of peripheral or centre.
Performance data elaboration related to a single parameter lead to a definition of performance of peripheral.

To create instruments reports follow the next procedure:

- Set up observation period, start date, if necessary end date. (Aggregation type has no influence on data).
- Select 'Tools report from menu 'Report'; it appears selection parameters window already described on Report option paragraph.
  It is possible to select one or more measure of one station.



4.6 Text format report

Text format report allows to diplay in the same reports information related to more than one station.

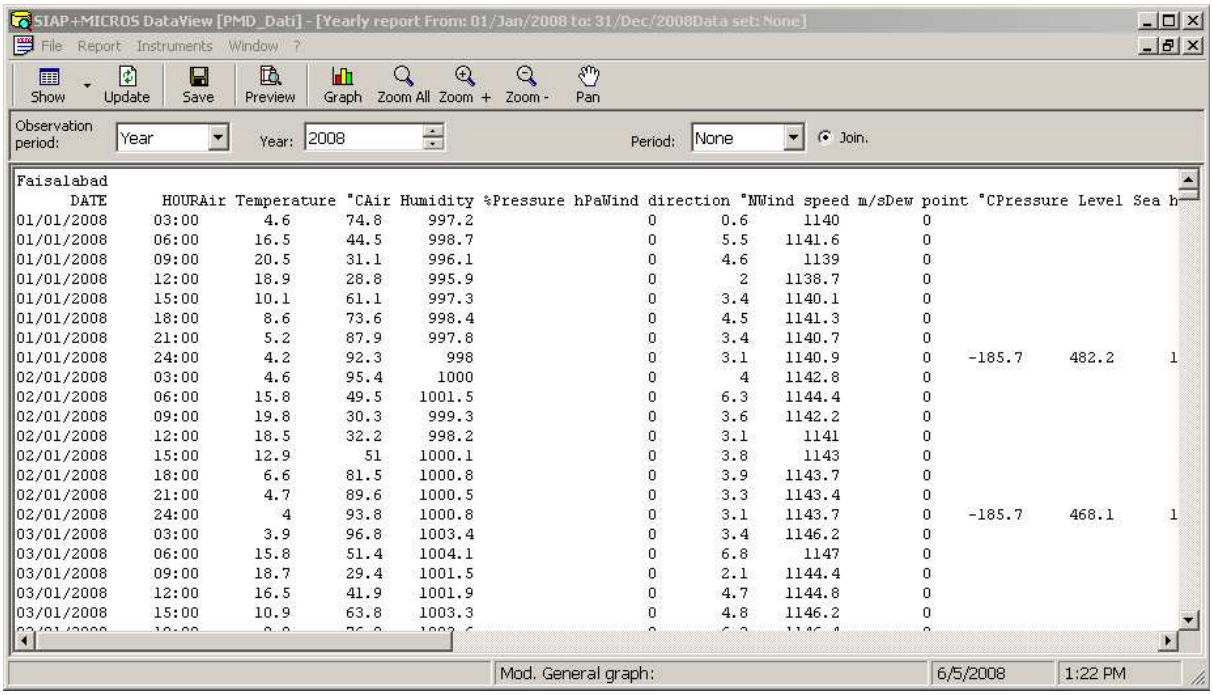
Compared with customized report the output data is a file ascii in RTF format and not a grid.

If parameters are related to more stations, document is divided into sections corresponding to selected stations.

Parameters selection is identical to which of customized report.

To create a text format follow the next procedure:

- Set up observation period, start date, if necessary end date and aggregation type.
- Select 'Text format report from menu 'Report'; it appears selection parameters window already described on Report option paragraph.
  It is possible to select one or more measure of one station.



4.7 Calibration report

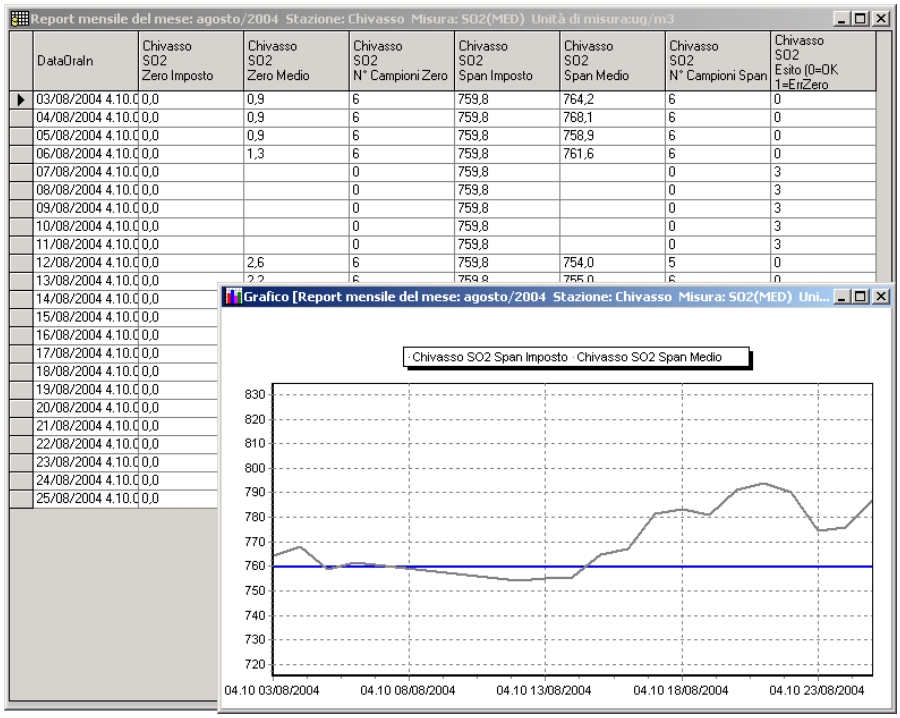
Calibration report allows to display the running calibrations result on nets about air quality, water quality. Report is related to a measure of one station.

Displayable information are:

- Fixed Zero, Measured Zero, Number Samples of Zero
- Fixed SPAN, Measured SPAN, Number Samples of SPAN
- Calibration result

To create a calibration report follow the next procedure:

- Set up observation period, start date, if necessary end date. (Aggregation type does not influence processing).
- Select 'Calibration report from menu 'Report'; it appears selection parameters window already described on Report option paragraph.
  It is possible to select one or more measures from one or more stations.
  - Click 'OK' to create selected measures reports



4.8 Sampler report

Refrigerator sampler data (CAFR).

Displayable information are:

- Bottle Number, Sampling start date, carried out takings, remaining takings, sampler status, alarm condition.

To create a sampler report follow the next procedure:

- Set up observation period, start date, if necessary end date. (Aggregation type has no influence on data).
- Select 'Sampler report from menu 'Report'; it appears selection parameters window already described on Report option paragraph.
  - Click 'OK' to create report.

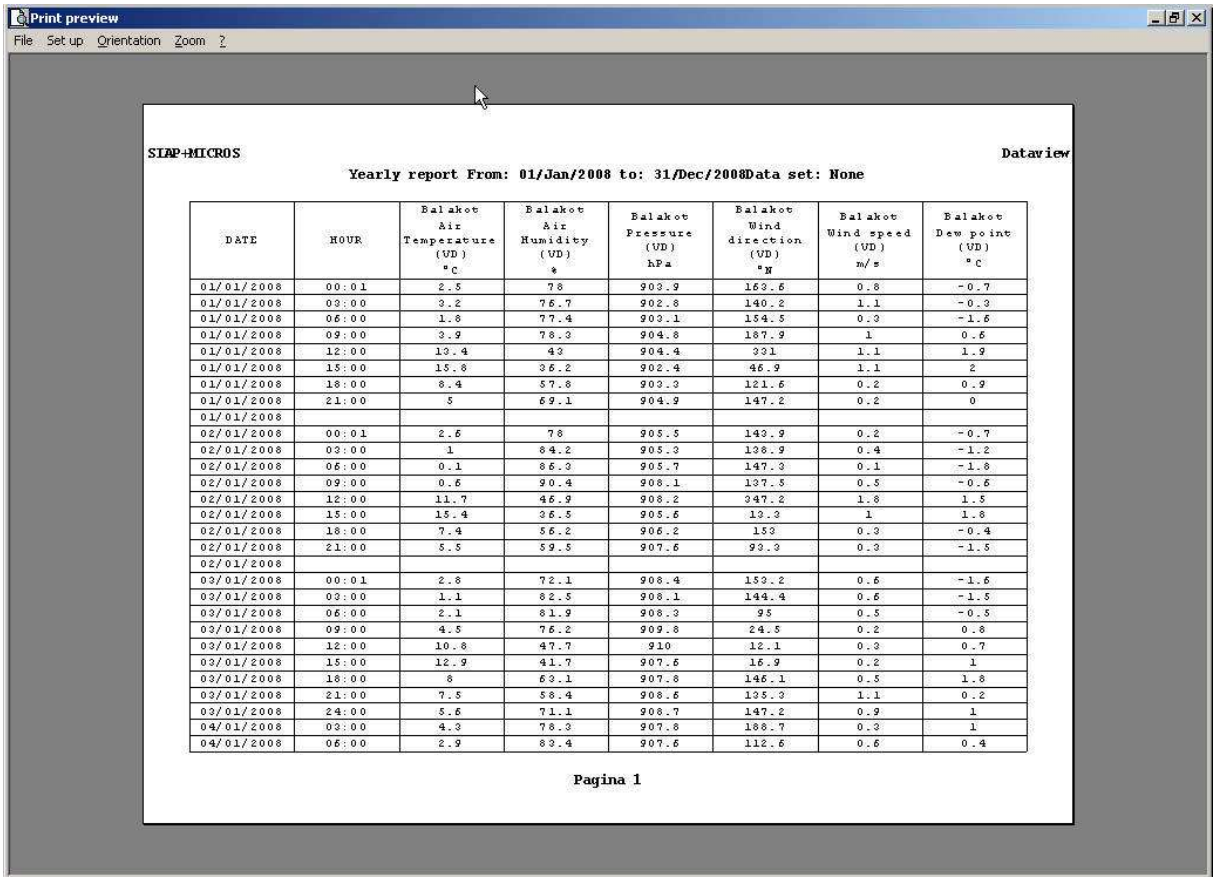
Report mensile del mese: gennaio/2005 relativo al campionatore

DataOraIn	Tirso Camp_1 Bottiglia n°1 Inizio camp	Tirso Camp_1 Bottiglia n°1 Prelievi eseguiti	Tirso Camp_1 Bottiglia n°1 Prelievi rimanenti	Tirso Camp_1 Bottiglia n°1 Stato(0=in corso 1=Fine 2=Attesa)	Tirso Camp_1 Bottiglia n°1 Allarme (0=OK 1=Errore)
12/01/2005 8.09.00					
12/01/2005 11.17.00	11/01/2005 11.17.04	0	2	2	0
12/01/2005 11.19.00	11/01/2005 11.19.12	0	2	2	0
13/01/2005 8.09.00	12/01/2005 8.04.48	1	1	0	0
13/01/2005 20.09.00	12/01/2005 20.04.48	2	0	1	0
14/01/2005 8.09.00					
14/01/2005 20.09.00					

4.9 Data output

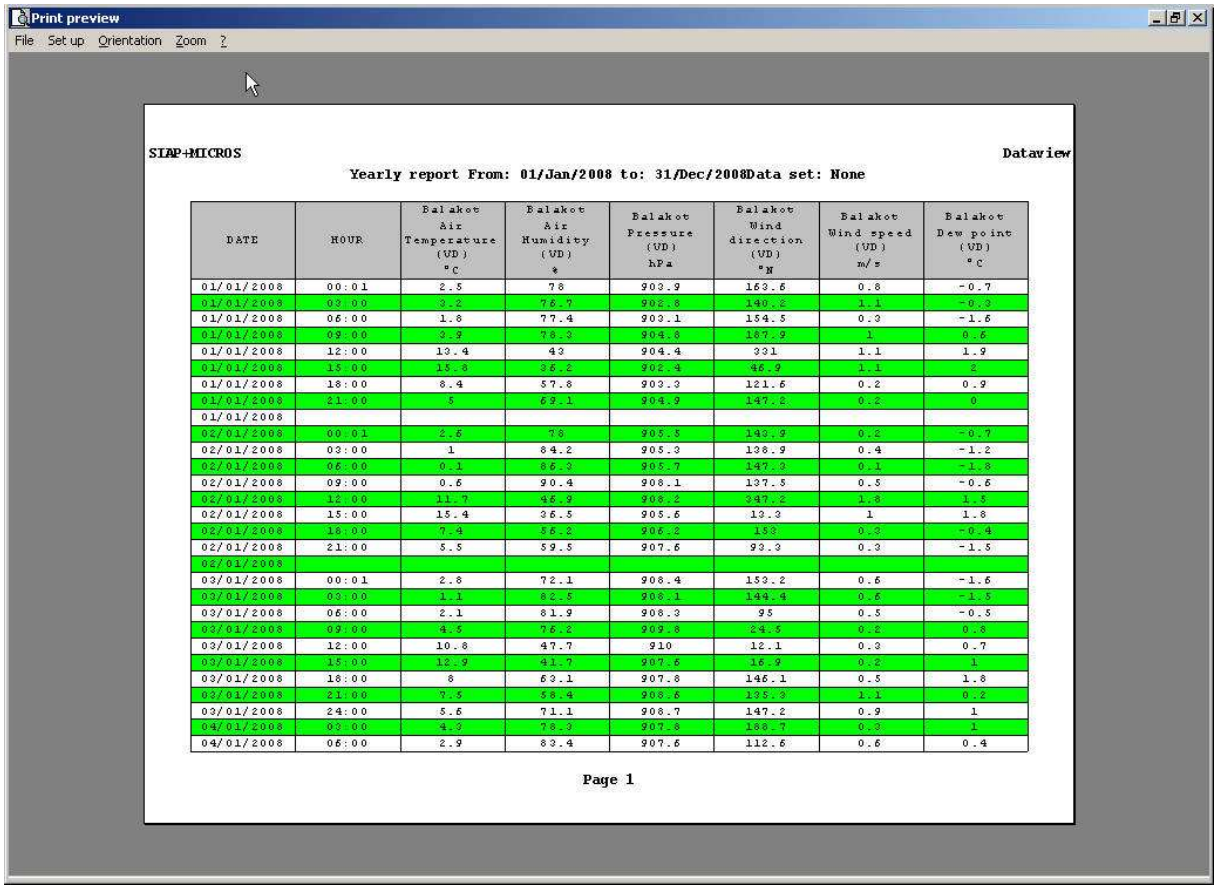
4.9.1 Data printing on printer

To print displayed data is necessary to select report and click push button or select 'Print preview' from menu 'File'. In printing it is obtained an exact copy of all data displayed (all parameters), organized in pages. If in selected report was visible the summary, it appears also in printing. Before sending printing to system printer, **DataView** displays a print preview like the following:



DATE	HOUR	Balakot Air Temperature (VD) °C	Balakot Air Humidity (VD) %	Balakot Pressure (VD) hPa	Balakot Wind direction (VD) °N	Balakot Wind speed (VD) m/s	Balakot Dew point (VD) °C
01/01/2008	00:01	2.5	78	903.9	163.6	0.8	-0.7
01/01/2008	03:00	3.2	76.7	902.8	140.2	1.1	-0.3
01/01/2008	06:00	1.8	77.4	903.1	154.5	0.3	-1.6
01/01/2008	09:00	3.9	78.3	904.8	187.9	1	0.6
01/01/2008	12:00	13.4	43	904.4	331	1.1	1.9
01/01/2008	15:00	15.8	36.2	902.4	46.9	1.1	2
01/01/2008	18:00	8.4	57.8	903.3	121.6	0.2	0.9
01/01/2008	21:00	5	69.1	904.9	147.2	0.2	0
01/01/2008							
02/01/2008	00:01	2.6	78	905.5	143.9	0.2	-0.7
02/01/2008	03:00	1	84.2	905.3	138.9	0.4	-1.2
02/01/2008	06:00	0.1	86.3	905.7	147.3	0.1	-1.8
02/01/2008	09:00	0.6	90.4	906.1	137.5	0.5	-0.6
02/01/2008	12:00	11.7	46.9	908.2	347.2	1.8	1.5
02/01/2008	15:00	15.4	36.5	905.6	13.3	1	1.8
02/01/2008	18:00	7.4	56.2	906.2	153	0.3	-0.4
02/01/2008	21:00	5.5	59.5	907.6	93.3	0.3	-1.5
02/01/2008							
03/01/2008	00:01	2.8	72.1	908.4	152.2	0.6	-1.6
03/01/2008	03:00	1.1	82.5	908.1	144.4	0.6	-1.5
03/01/2008	06:00	2.1	81.9	908.3	95	0.5	-0.5
03/01/2008	09:00	4.5	76.2	909.8	24.5	0.2	0.8
03/01/2008	12:00	10.8	47.7	910	12.1	0.3	0.7
03/01/2008	15:00	12.9	41.7	907.6	16.9	0.2	1
03/01/2008	18:00	8	63.1	907.8	146.1	0.5	1.8
03/01/2008	21:00	7.5	58.4	908.6	135.3	1.1	0.2
03/01/2008	24:00	5.6	71.1	908.7	147.2	0.9	1
04/01/2008	03:00	4.3	78.3	907.8	188.7	0.3	1
04/01/2008	06:00	2.9	83.4	907.6	112.6	0.6	0.4

It is possible to customize print preview displaying table as simple grid or as colored printout as the following illustration.

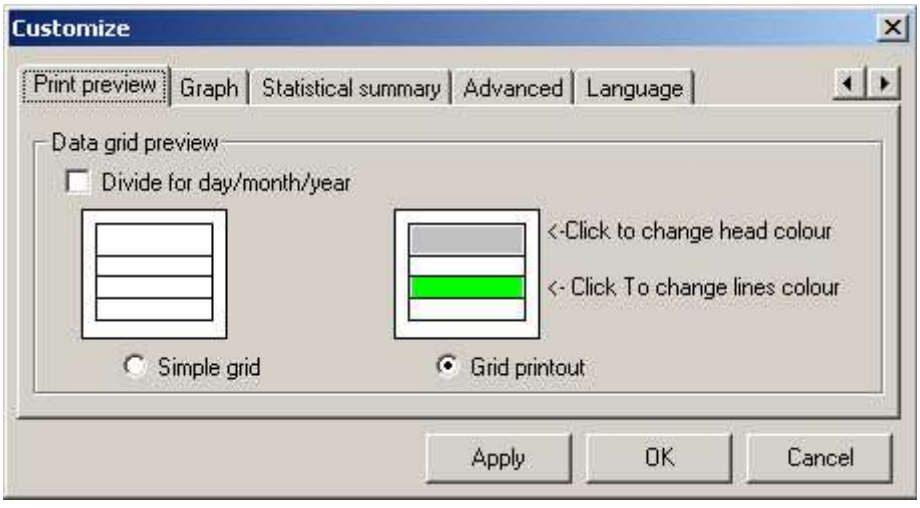


DATE	HOUR	Balakot Air Temperature (VD) °C	Balakot Air Humidity (VD) %	Balakot Pressure (VD) hPa	Balakot Wind direction (VD) °N	Balakot Wind speed (VD) m/s	Balakot Dew point (VD) °C
01/01/2008	00:01	2.5	78	903.9	163.6	0.8	-0.7
01/01/2008	03:00	3.2	76.7	903.8	140.2	1.1	-0.3
01/01/2008	06:00	1.8	77.4	903.1	154.5	0.3	-1.6
01/01/2008	09:00	3.9	78.3	904.6	187.9	1	0.6
01/01/2008	12:00	13.4	43	904.4	331	1.1	1.9
01/01/2008	15:00	15.8	36.2	902.4	48.9	1.1	2
01/01/2008	18:00	8.4	57.8	903.3	121.6	0.2	0.9
01/01/2008	21:00	5	69.1	904.9	147.2	0.2	0
01/01/2008							
02/01/2008	00:01	2.6	78	905.5	148.9	0.2	-0.7
02/01/2008	03:00	1	84.2	905.3	138.9	0.4	-1.2
02/01/2008	06:00	0.1	86.3	905.7	147.3	0.1	-1.8
02/01/2008	09:00	0.6	90.4	906.1	137.5	0.5	-0.6
02/01/2008	12:00	11.7	46.9	906.2	347.2	1.8	1.5
02/01/2008	15:00	15.4	36.5	905.6	13.3	1	1.8
02/01/2008	18:00	7.4	86.2	906.2	153	0.3	-0.4
02/01/2008	21:00	5.5	59.5	907.6	93.3	0.3	-1.5
02/01/2008							
03/01/2008	00:01	2.8	72.1	908.4	153.2	0.6	-1.6
03/01/2008	03:00	1.1	82.5	908.1	144.4	0.6	-1.5
03/01/2008	06:00	2.1	81.9	908.3	95	0.5	-0.5
03/01/2008	09:00	4.5	76.2	909.6	24.5	0.2	0.8
03/01/2008	12:00	10.8	47.7	910	12.1	0.3	0.7
03/01/2008	15:00	12.9	41.7	907.6	16.9	0.2	1
03/01/2008	18:00	8	63.1	907.8	146.1	0.5	1.8
03/01/2008	21:00	7.5	58.4	908.6	135.3	1.1	0.2
03/01/2008	24:00	5.6	71.1	908.7	147.2	0.9	1
04/01/2008	03:00	4.9	78.3	907.8	188.7	0.3	1
04/01/2008	06:00	2.9	83.4	907.6	112.6	0.6	0.4

It is besides possible to print table divided in day or months.

To change settings preview follow the next procedure:

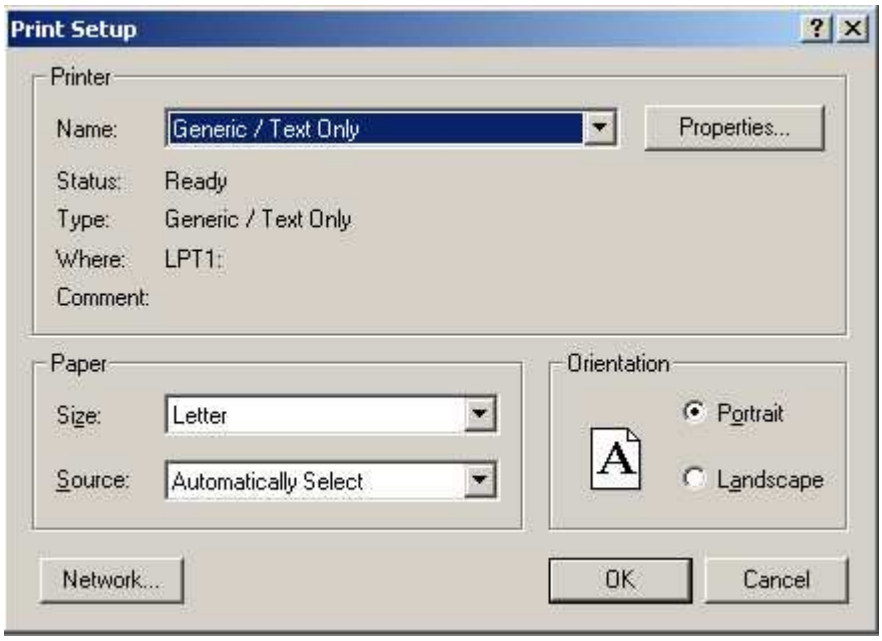
- select ‘Customize’ from menu ‘Tools’; it twill appear the following window
- select tab strip ‘Print Preview’



- change set up
- click ‘OK’ to make them definitive or ‘Cancel’ to cancel.

Preview window displays document such as it twill appear on printing. A drop-down menu, set in the higher part of the window, allows to move between various pages, to set up title and foot page, character, display zoom, vertical and horizontal direction of printing.
All changes bring to preview in report are saved on ‘DataView.ini’ file and set up again in the next print preview.

Control Print” from menu “File “ recall the following setting printing window:



Select printer with printers selectors click **‘OK’** to confirm printing, or click **‘Cancel’** to cancel. **N.B.** To install a new printer or set up again a former one, refer to functions of *Windows™* operating system.

4.9.2 Data export on file

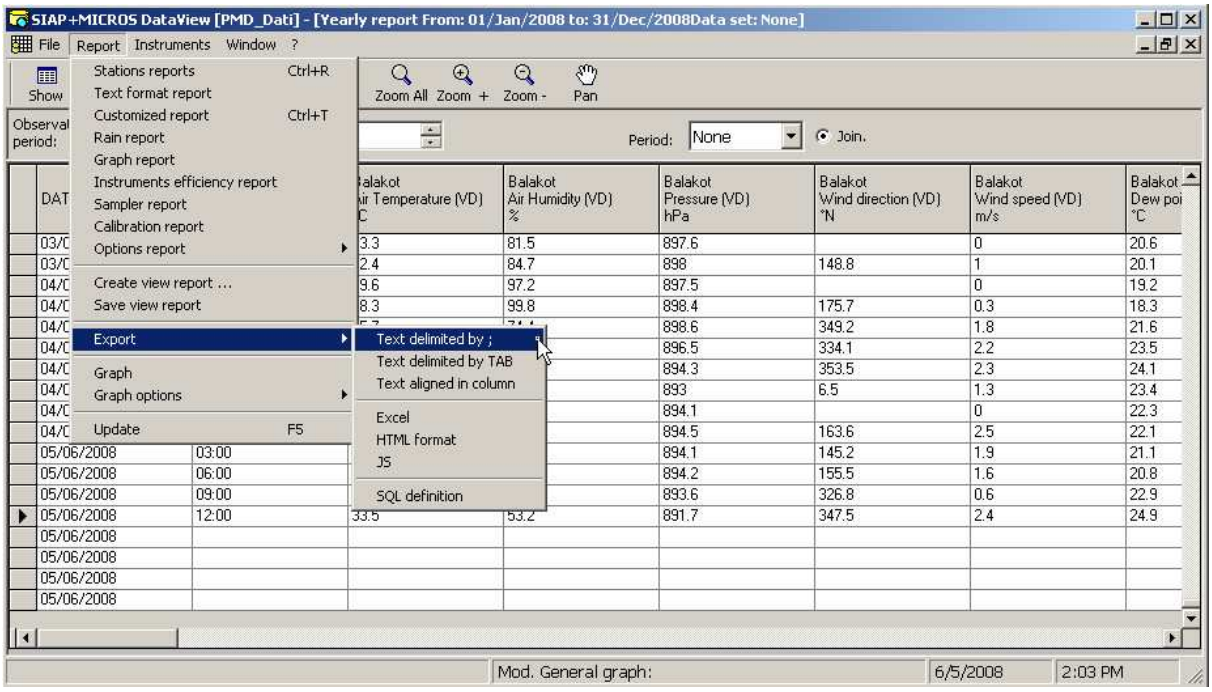
It is possible to export data contained in a report with 4 formats:

- text (defined by ;),
- text (separated by TAB).
- Microsoft Excel worksheet.
- HTML file format

With the first, it is obtained a text file organized by lines and columns very similar to video presentation, as separator between one column data and the next it is displayed character ‘**;**’. With the second it is obtained a text file as the previous only that as separator is used ‘TAB’. If in your PC is installed Microsoft Excel, selecting the third format, it will be possible to export content directly from active report in a new worksheet. The dimensions of sheet columns width are set automatically compared to contained text; column headers are bold. Selecting forth format it obtains an HTML file format.

To export data in wanted format follow the next procedure:

- select report
- select wanted format from menu “Report | Export’



4.9.3 Export by copy-paste

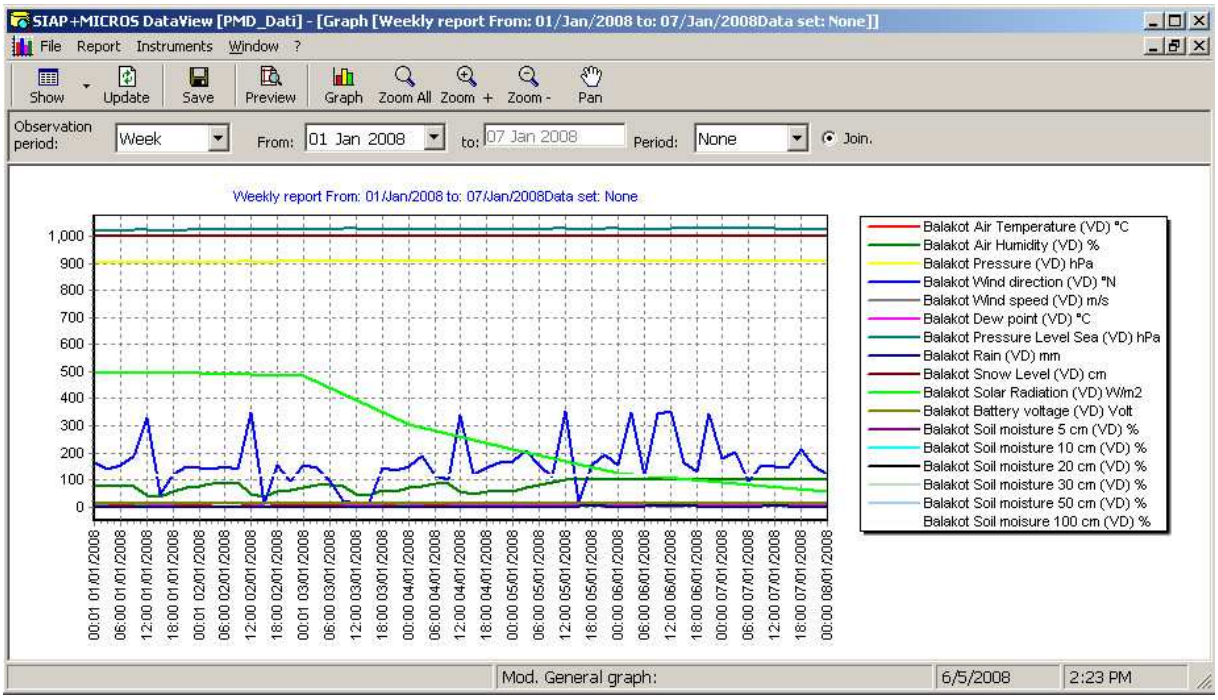
It is possible to export data contained in another windows application running copy-paste procedure. After having created report select menu item Report>Options Report>Copy or press CTRL+INS; in application destination select Paste.

4.10 Graphs

Data displayed in active report can be reported on a graph.

Graph reports on X axis the date and on Y axis all series related to report columns. To display data in shape of graph, follow the next procedure:

- Select report
- Click  push button (alternatively is possible to select 'Graph' from menù 'Report'. The graph is displayed in a window similar to the next:



By definition it is built a lines graph of 2 dimensions.

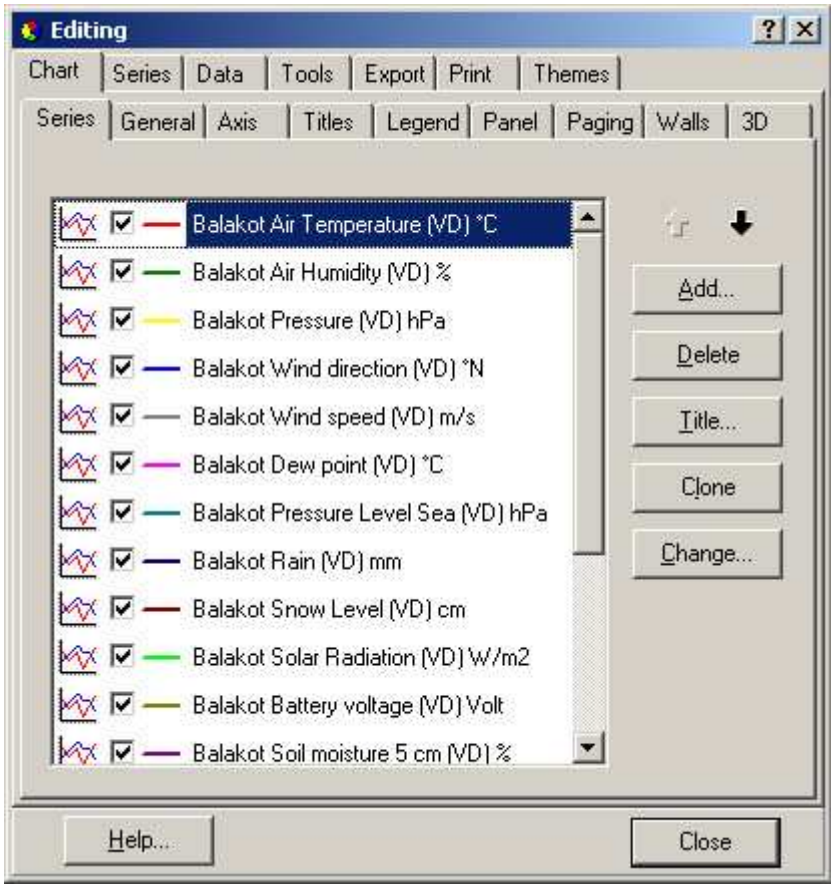
It is possible to set up measure displaying method:

using a single point of reference axis or associating every measure to his axis (multiaxis graph)

4.10.1 Graph options

In order to highlight significant points it is possible to run zoom or horizontal scrolling clicking  , push buttons, or clicking right key and selecting option from quick menu.

It is possible to change lines colour, thickness and/or however active graph settings clicking right key selecting properties; it will appear the following window.



To get information about a specific control of graphic editor, select key at the right top in square and drag it on wanted point; it will be displayed a context Help relating to the control.

Graph Editor

There are 2 main sections in graph editor and they are graph parameters and series parameters divided respectively in 2 tab strip 'Chart' and 'Series'

Tab strip 'Chart'

It is possible to change in graph afterwards its creation. Graph parameters are divided in the following sections:

Tab strip 'Series'

It is possible to change series type compatiblely with the graph type; it is besides possible to hide, erase or shift series presentation order

Tab strip ' Page'

It is possible in this section to set up borders, enable/disable zoom and scrolling both horizontal and vertical, run preview and export graph on file.

To maximize a graph portion is necessary to select a point on graph with mouse left key dragging it towards low/right drawing a rectangle. Release mouse key; rectangle content will be maximize. It is possible to repeat operation many times.

To restore original graph dimensions draw a rectangle in the opposite direction (top /left).

Tab strip 'Axis'

It is possible in this section to set up axis style.

Tab strip 'Titles'

It is possible in this section to set up graph title and subtitle.

Tab strip 'Legend'

It is possible in this section to set up legend style. (see also tab strip 'General' of tab strip 'Series')

Tab strip 'Panel'

It is possible in this section to set up wallpaper colors, if necessary to insert an image , to define a 2 colors gradient.

Tab strip 'Paging'

It is possible in this section to set up number of displayed points throughout every page; it is useful in the presence of many view points. By definition initialy graph displays all points.

Tab strip 'Walls'

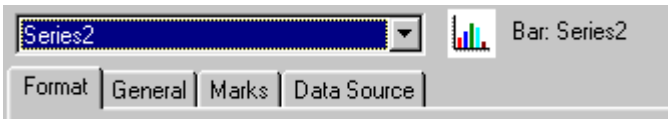
It is possible in this section to set up colors definition and axis thickness.

Tab strip '3D'

It is possible in this section to set up enableing/disableing 3 dimensions graph management.

Tab strip 'Series'

'Series' tab strip holds information relating to graph single series. A descending square allows to select series you want to change.



Tab strip 'Format'

It is possible in this section to set up series color and dimension.

Tab strip 'General'

It is possible in this section to set up format e association with axis.

Tab strip 'Marks'

It is possible in this section to set up format, frames and 'Marker' points colors.

Tab strip 'Data Source'

It is possible in this section to connect series with a data ODBC source or with mathematical function.

4.10.2 Graph model

It is possible to save graph into a model. In the model are saved colours, wallpaper, edges… with data exception.

To save the model select Report>Graph Options>Model>Save Model.

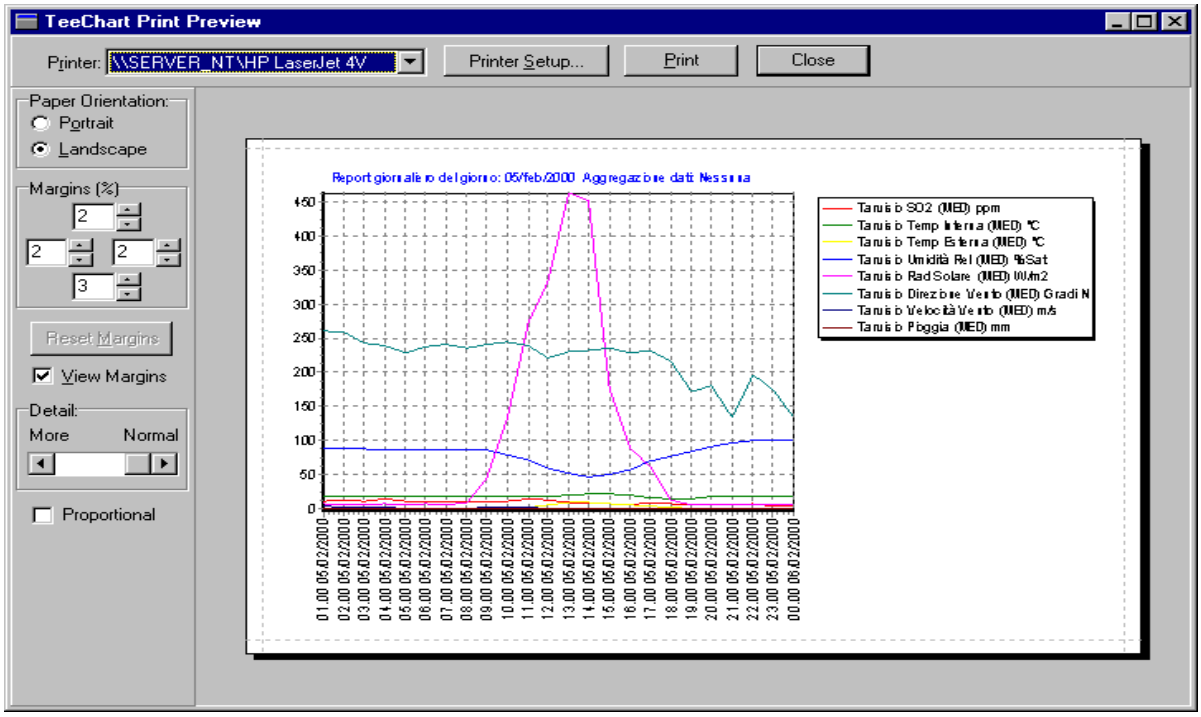
To set up new graphs on saved models select Report>Graph Options>Model>Load Model.

To set up new graphs without model select Report>Graph Options>Model>Set Default.

It is possible to connect model to view: it means that every time it is run a graph on view data it will be applied the model.

To print graph is necessary to select the graph and select ‘print’ from menu ‘File’.

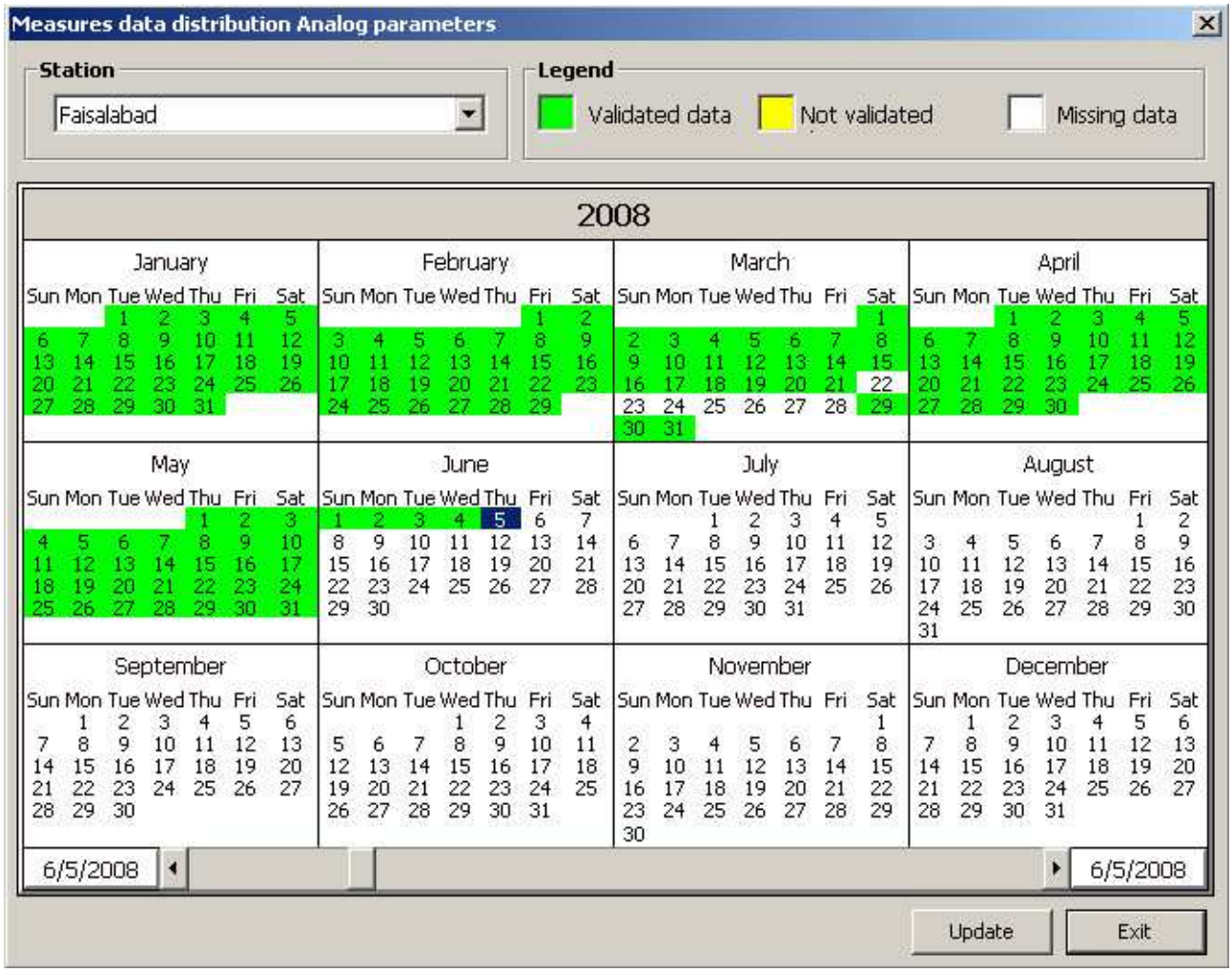
To display graph preview is necessary to select the graph and click push button or select ‘Print preview’ from menu ‘File’.



5 Data distribution view

It is possible before generating report to display a yearly calendar showing the days in which are present validated data or not yet validated data.

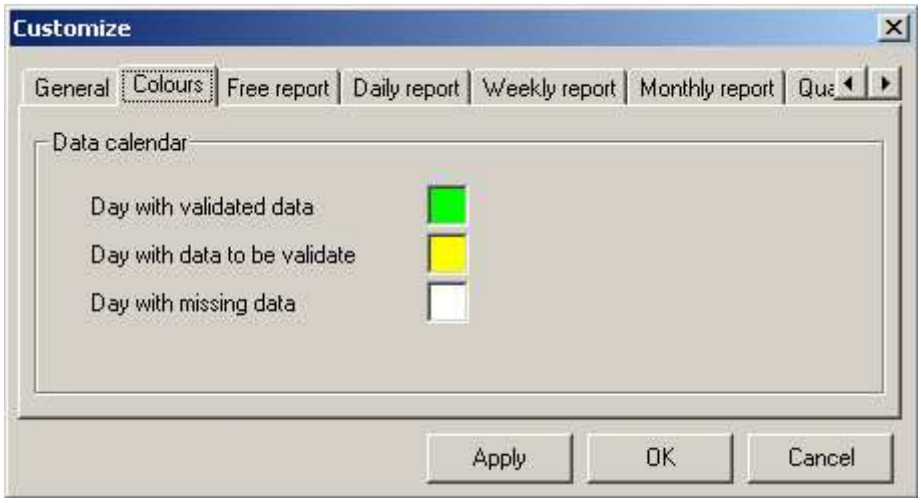
To display calendar select 'Tools | Data Distribution'; it appears the next window.



Calendar is updated by clicking 'Update' and every time it is selected a different station.

To change colours of validated days, not validated or not present, follow the next procedure:

- choose 'Customize"' from menu 'Tools'; it will appear the following window
- select tab strip 'Colours'

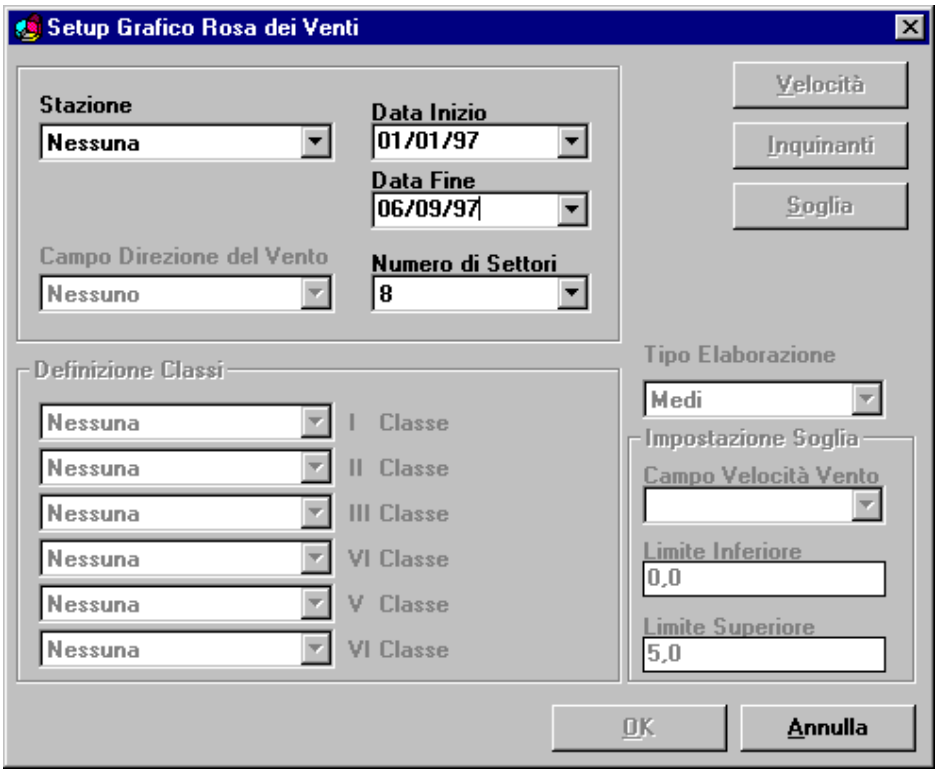


- change settings clicking on colored squares
- click ‘OK’ to make them definitive or ‘Cancel’ to cancel.

6 Wind rose

6.1 Setting.

To recall initialisation mask of graph “Wind Rose” is sufficient to run under menu Tools | Wind Rose.



After having recalled initialisation mask it is to proceed with data insertion which establish processing data source and processing different types.

STATION setting.

At the beginning in the insertion square for station name it appears legend *“none”* which means that none of the stations present in database has been selected as data source yet. Click arrow symbol and select the name of wanted station.

WIND DIRECTION FIELD setting.

As second step is necessary to select *“Wind Direction”* data which you would refer to. Here, as above, at the beginning it appears legend *“none”* which means that no stations has been selected yet. Afterwards, at station choice, it appears first valid parameter name for this kind of processing, if writing in insertion square does not change it means that no “wind direction” field is present so it is not possible to carry out *Wind Rose* graph.

START DATE AND END DATE setting.

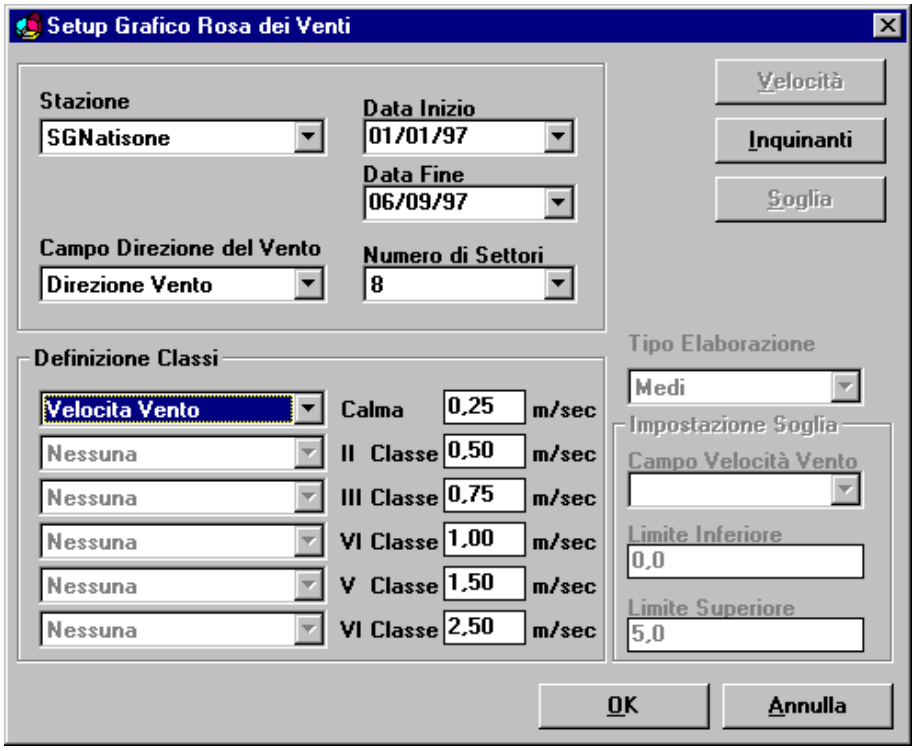
It is possible, with these two parameters, to set up processing period parameters. Usually they are set as previous day and current day.

SECTOR NUMBER setting.

It is possible, with this parameter, to choose if displaying 8-sector graph (North, North-East, East, South-East, South, South-West, West) or a 16-sector graph (North, North-North- East, North- East, North-East-East, East, South- East, South- East - East, South-South-East, South, South-South-West, South-West, South-West - West, West).

1.1. Wind Rose of speed.

This control set up graph to carry out processing type depending on speed classes. It is always possible, anytime (unless it is been given OK for graph processing), to change graph type from Speed to Polluting and vice versa. After having selected processing type is possible to select the field *"Wind speed"* where to carry out Wind Rose graph. At the beginning in insertion square *"I Class" .. "VI Class"* appears legend *"None"* and they are all disabled, choosing processing type *Speed* it is enabled first insertion square where it must be inserted a valid parameter with which carries out calculations (all these parameters have measure unit ***m/sec***) and the six different speed classes yet predefined (*next picture*). If the name of insertion square remains disable and speed classes list does not appear so there is no field on database where to carry out calculations.



CLASS DEFITION setting – wind direction class.

At the beginning in insertion square for speed parameter name (Class Definitions) appears legend *"none"* which shows that yet none of present stations on database has been selected as data source. Click on symbol arrow and select wanted parameter name.

CALM setting.

By calm it is meant lower limit of wind speed that invalidate wind direction measure (or rather wind direction measure takes meaning on if wind speed exceeds calm speed). If such value is set to zero it is guessed that calm speed does not exist (all wind direction measures are considered valid).

Other classes setting (CLASS II . . . CLASS VI).

At this point every class higher limit have to be set up (or rather one class is composed by a lower limit defined by previous class and by an higher limit which defines the class). At the beginning all five classes (the sixth is represented by CALM class) have a set value, to change value is sufficient to click on wanted insertion square and insert wanted number.

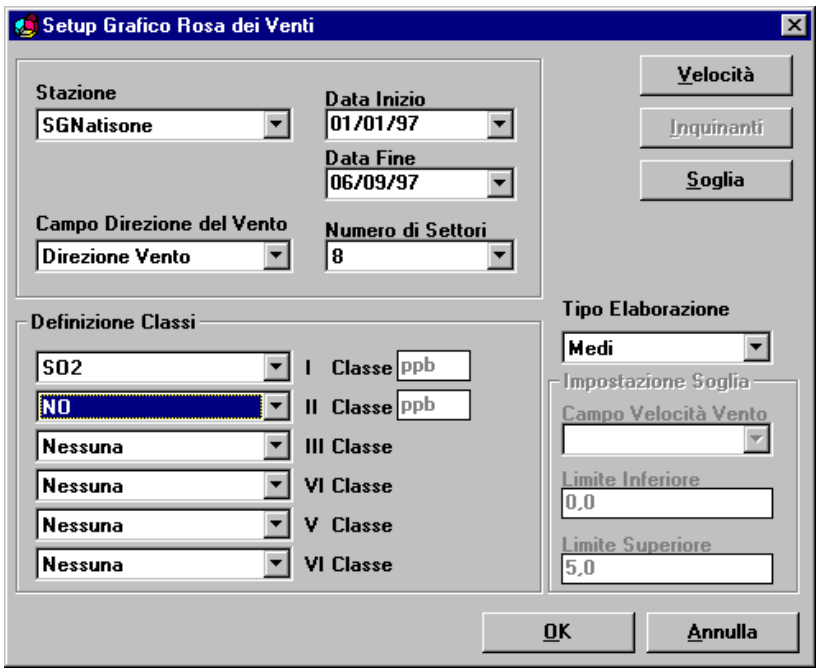
Graph processing and interpretation.

After having set up all values mentioned above is sufficient to click OK to get out corresponding Rose graph. For every direction (Ex. North-East) and every class corresponding result must be interpreted in the following way:

- if **Class III** has a value of 15.5% towards North-east direction it means that on total of wind speed analysed samples, 15.5% has North-East direction with speed included between 0.5 and 0.75 m/sec (class limit is that set up);
- if **Calm** has a value of 12.3% it means that 12.3% of considered samples has speed lower than m/sec. (class limit is that set u)

1.2. Wind Rose of pollutants.

This control set up graph to carry out processing type depending on pollutants classes. It is always possible, anytime (unless it is been given OK for graph processing), to change graph type from Speed to Pollutants and vice versa. After having selected processing type is possible to select the field *"Wind speed"* where to carry out Wind Rose graph. At the beginning in insertion square *"I Class" .. "VI Class"* appears legend *"None"* and they are all disabled, choosing processing type *Pollutants,* are enabled all squares where must be inserted valid parameters with which carries out calculations (all these parameters have concentration measure unit such as: ppb, ppm, µg/m3 (*Next picture*). If insertion squares name remain disabled and pollutants classes list do not appear so there is no field on database where to carry out calculations.



Classes setting: CLASS I . . . CLASS VI.

At this point you have to set up every class pollutants (or rather a class is a pollutant). At the beginning all six classes are set up on *"None"*, to change value is sufficient to click on wanted insertion square and select

wanted pollutant. It is necessary to set up classes starting from the first because measure unit of first class is the reference point, if class measure unit differs from **I Class** then it is requested a conversion fact.

THRESHOLD setting.

Clicking **THRESHOLD** insertion squares of *"Threshold setting"* are enabled/disabled. Threshold setting works to set a minimum and a maximum threshold for field *"Wind speed"* (this one works to reject values of calm and too high speed wind direction).

WIND SPEED FIELD setting.

At the beginning in insertion square for parameter name WIND SPEED FIELD does not appear no legend that indicates that it has been not selected THRESHOLD setting yet. Enabling THRESHOLD setting appear first speed field available, otherwise it appears legend *"None"* and fields remain disabled. It is possible to change WIND SPEED FIELD clicking on arrow at the side of selected name and then selecting new parameter from list.

LOWER LIMIT and HIGHER LIMIT setting.

At the beginning the two limits have a set up value, to change value is sufficient to click on wanted insertion square and to insert wanted number.

Processing Type.

It is possible to select three different processing types about Pollutants Wind Rose:

1. **Means**: value relating to a direction and to a class/pollutants is calculated as mean value of all samples present in that direction;
2. **Maximums**: value relating to a direction and to a class/pollutants is calculated as maximum value of all samples present in that direction.
3. **Counter**: value relating to a direction and to a class/pollutants is calculated as percentage, weight of each sample is 1 (Counter) and percentage is carried out on addition of all samples of all classes/pollutants.

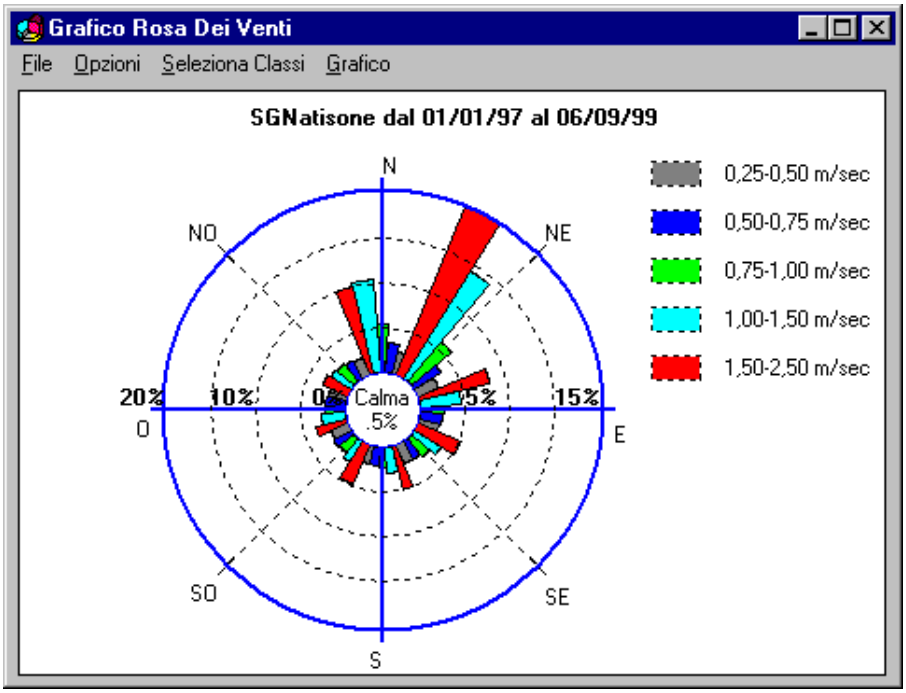
Graph processing and interpretation.

After having set up all values mentioned above is sufficient to click OK to get corresponding Rose graph. For each direction (Ex. North-East) and each class corresponding result must be interpreted in the following way:

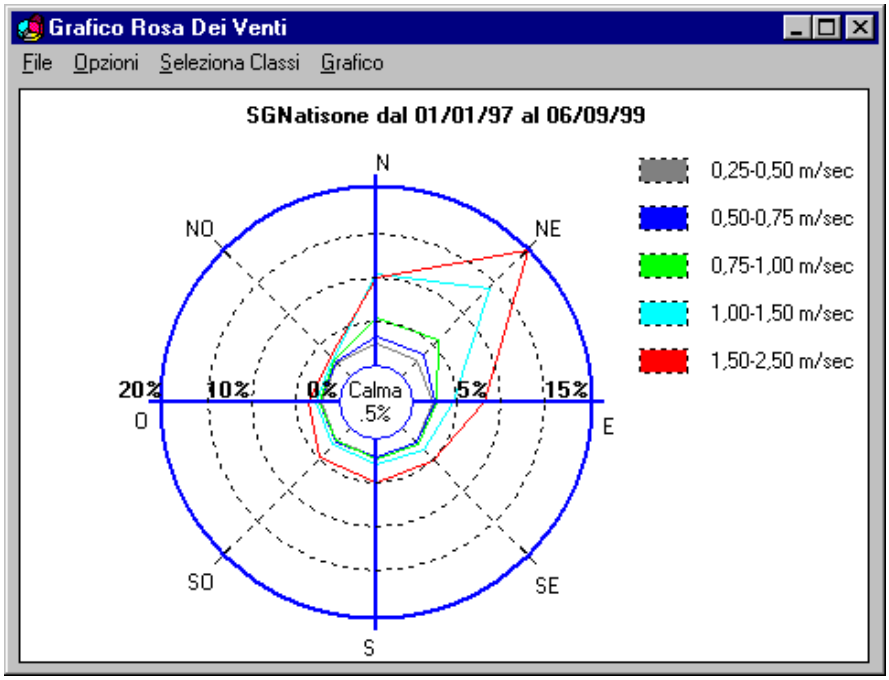
- **MEANS**: if **Class I** has a value of 15.5 ppm in direction North-East, it means that on average the pollutant, selected as **Class I,** has a value of 15.5 ppm when wind takes North-East direction;
- **MAXIMUMS**: if **Class I** has a value of 35.5 ppm in direction North-East, it means that maximum peak of pollutant, selected as **Class I,** has a value of 35.5 ppm when wind takes North-East direction;
- **COUNTER**: if **Class I** has a value of 15.5% in direction North-East, it means that on total of analysed samples of pollutant, selected as **Class I,** 15.5% has North-East direction.

6.2 Wind Rose graph.

In this chapter it is explained working of different menu and of options you find in wind rose Graph.



Wind rose side by side bars graph



Menu FILE.

Open Graph

This control allows to rescue graph data saved on a file.

Save as…

This control allows to save current graph data on file.

Save Bitmap

This control allows to save graph in bitmap format.

Print Graph

This control allows to print graph.

Exit

This control allows to close application.

Menu OPTIONS.

Invert Scale Colour

It inverts graph scale colour (Black - White).

Change Title

It changes graph title displayed above balanced.

Change Label

It changes name linked to a class.

Colour

It changes colour linked to a class.

Filling Type

It changes filling type (horizontal lines, 45° line s..) of one class.

Select Class.

This menu allows to choose if one class must or not must be displayed on graph (N.B. at this point it is allows to take action only on view and not on processing).

Graph.

This menu allows to choose up to three graph types.

Side by side bars.

Every sector is divided in equal parts so that to get some “under sector” as classes number. Then for each class and each sector is drawn a bar linked to calculated value for that bar in that sector.

Overlapped bars.

For each class and each sector is drawn the bar linked to value for that bar in that sector with sector dimensions (all bars are then overlapped).

Interrupted line.

For each class is drawn a line (as for a polar graph) which intercept for each sector calculated value for that class in that sector.

7 Measure registry management

It is possible to recall configuration management application using the following procedure:

- choose ‘Start configuration management from menu ‘Tools | Configuration’.

If in the configuration management program are made modifications, it is possible to update Dataview configuration Choosing ‘Update’ from menu ‘Tools | Configuration’.

For a more detailed explanation about configuration management please go to relating manual.