Manual

Weather Software
32bit

for REINHARDT Weather Stations and Climatic Sensors

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1. Installation of the Weather-Software

This manual is valid for all version of the 32bit software.
(Some differences between the versions are possible).
Insert the weather-CD-ROM into your CD-Drive. If autostart is active, the CD-ROM starts automatically. If not, run STARTER.EXE in the root-directory of the Weather-CD. The start-menu of the CD-ROM opens. Here you can directly install software or switch to the CD-content.
While running the weathersoftware, you'll always get online-help by pressing the F1-key. By pressing F1 the 2nd time, this manual opens.

Ths software implicitly needs to be installed in a folder which is not write protected for otherways changes can't be written in the ini-files (i.e. storage interval, data path, ..)!

The Reinhardt software needs a COM-port when operating via "data from COM-port" or "data via modem". If the weather station is connected to the computer with an USB-converter, an USB-modem or similar devices, normally a driver software creates a virtually COM-port. These COM-port settings you might change via the device manager within the windows control panel. You reach it by pressing the windwos key and the break key at the same time.

Eigenschaften von USB Powered Serial Port (COM7)

Allgemein | Anschlusseinstellungen | Treiber | Details

Bits pro Sekunde: 9600

Datenbits: 8

Parität: Keine

Stoppbits: 1

Flusssteuerung: Keine

Erweitert...   Wiederherstellen

Erweiterte Einstellungen für COM7

COM-Anschlussnummer: COM7

OK
Abbrechen
Standard

USB Packetgrößen

Reduzieren Sie die Werte, um Performance-Probleme bei geringen Baudraten zu beheben.

Erhöhen Sie die Werte für eine höhere Geschwindigkeit.

Empfangen (Bytes): 4096

Senden (Bytes): 4096

BM Einstellungen

Reduzieren Sie die Werte, um Kommunikationsprobleme zu verringern.

Wartezeit (ms): 16

Allgemeine Optionen

PlugPlay für serielle Schnittstelle ☑

Serieller Drucker ☐

Abbrechen der Kommunikation, wenn das Gerät ausgeschaltet wird ☐

Event bei unvorhergesehener Entfernung des Geräts ☐

Timeouts

Minimale Anzahle der Lese-Timeouts (ms): 0

Minimale Anzahle der Schreib-Timeouts (ms): 0

Beim Schließen der Verbindung RTS aktiv setzen ☐

Abschalten der Modemansteuerung beim Hochfahren des Geräts ☐

Choose the desired COM-port within the device manager.
The screenshots are made under WIN XP. Under Windows Vista and Windows 7 the screens differ.

For more information refer to your Windows documentation!

The following pages are showing you the first start of the Reinhardt software step by step.

2. The first start - Using the weathersofware and basic operations

2.1 Start menus

When starting up the first time, different menus for the most important settings (datapath, storage interval, baudrate, COM-port, ..) will appear.

2.1.1 Configure Write / Read options

Here you can select the storage behaviour and give an optional Storage-ID.

Choose the folder, in which the weatherdata are stored.
(**Data directory**)
IMPORTANT: The path must start with a drive letter, \\ is not possible!

Additional Directory for data storage. If you want to store date in a 2nd folder, you can insert the path in here!
Please note: *Data into this folder are only stored, NOT checked like in the folder above !*
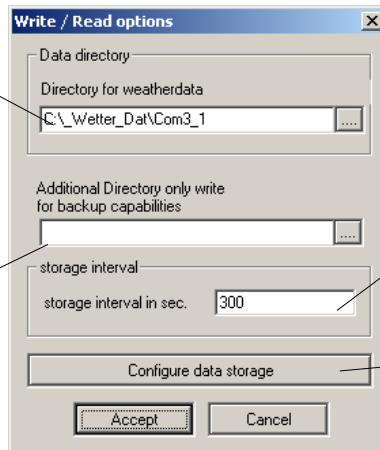
Here you set the storage interval in seconds.

Additional settings for advanced users.

Weatherstation with datalogger Select, if your weatherstation has got a datalogger, and you want to use it.

Data storage synchronous Choose, if you want to store data to the harddisk synchronous to the data storeds in the logger (see also help with F1)
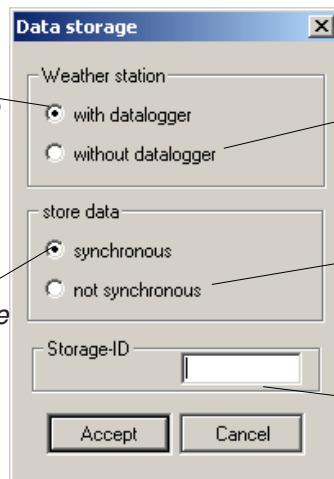
Weatherstation without datalogger Select, if your weatherstation hasn't got a datalogger .
Data storage not synchronous Choose, if your weatherstation has got no logger or does not send an ASCII #31 when storing into the logger (see also help with F1)

Storage-ID Adds this ID to the filename of stored weather data to be able to distinguish files from different weather stations.

2.1.2 Configure data storage

Data only read
When only reading archived data.

Data from COM-port
When the weather station is connected directly to a COM-port of the computer.

Select the COM-port
to which the weather-station is connected

Fixed baudrate
Tries to connect with the selected baudrate. (recommended)

Connection options
Settings for connection problems

Reconnect
Stores the settings and tries to connect to the weatherstation with this settings immediately.

Data via network :
If the weather station is connecteted to the PC via network with an IP-address then select this item.

Data via modem :
For remote control of the weather station with a GSM-module or modem.

Configure :
Configuration of the COM-port

Search for baudrate
Tries to find the baudrate automatically. (only recommended when you don't know the bau-drate)

Accept
Uses the settings when software is restarted.

Cancel
Exit without saving the set-tings

2.1.3 Settings for weatherdata

2.1.4 COM-port configuration

Connection properties:
Baudrate:
Default-Baudrate is 9600 Baud.
Possible Baudrates are:
300, 600, 1200, 2400, 4800, 9600, 19200, 38400
(To set via the Terminal-Window with the !B command)
Restart of software required!!

Number of databits.
Always set to 8 bits.

Setting of parity-check.
Always set to 0 (none).

Number of stopbits. Standard 1, when having problems, try 2.
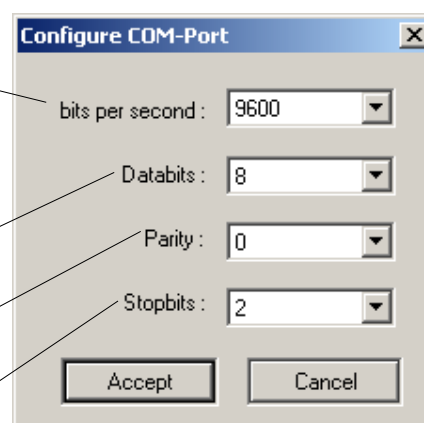
2.1.5 IP- or WEB-Address

IP- or WEB-Address
Here you insert either the IP-address of your weather station or a WEB-Address under which your weather station is available. A dynamic WEB-Address you may create at WWW.DYNDNS.COM for free.

TCP/IP Port
Here you insert the port-number of your weather station
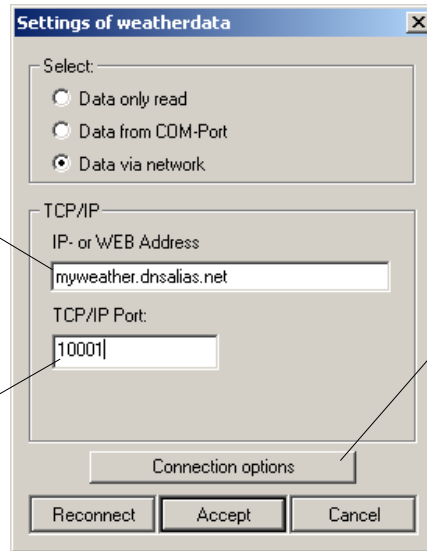
Connection options
Here you can set the behaviour of the software when problems connecting to the weather station occur, i.e. when using WLAN.

If you cannot connect your weather station directly to your PC, you may connect it via a TCP/IP network. In this case you are able to place the weather station far away from the PC without extra cabeling.

For integration of your weatherstation into the network you only need a converter from serial to TCP/IP (i.e. XPORT from Lantronix, or any other), which converts the serial string of the weather station into a TCP/IP protocol with IP-address and port number. Another solution can be a WLAN outdoor module if you've already got a WLAN-router. Then the weather data also can be read from any place in your network.

Please note that not different PCs can connect to the weather station in the same time. Only one single PC can get data directly from the weather station.

To get data with different PCs you configure one PC as master, writing data onto the HDD.
The software on all other PCs (clients) must be configured to "only read" as shown above.
In the mode "only read" the software connetcs each 10 seconds to the data path to refresh the data. The real update interval then of course depends on the storage interval of the computer on which the data are stored by the weather station!

2.1.6 Connection options

Automatically reconnect
Activate the checkbox , when using WLAN and the connection often makes problems.

Time out for reconnect
Here you set time to wait between the tries to reconnect.
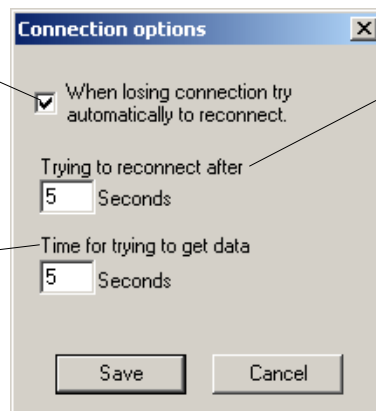
Time for trying to get data
Here you set how long the software tries to get data while trying a reconnect.

2.1.7 Data via Modem

Another option for connecting the weather station to the computer is connecting it via a GSM-module. When using this option the weather data can be read nearly world wide via the GSM net.
To perform this the weather station needs to be connected to our GSM900 module. The computer reading the data is connected to another GSM module (GSM-PC-module) using a USB-port. With this GSM-PC-module you are able to connect to the weather station and get the current data or read the data logger. The GSM-PC-module runs at 115200 baud and only needs a free USB-port which is set to a virtual COM-port with the delivered driver sofware.
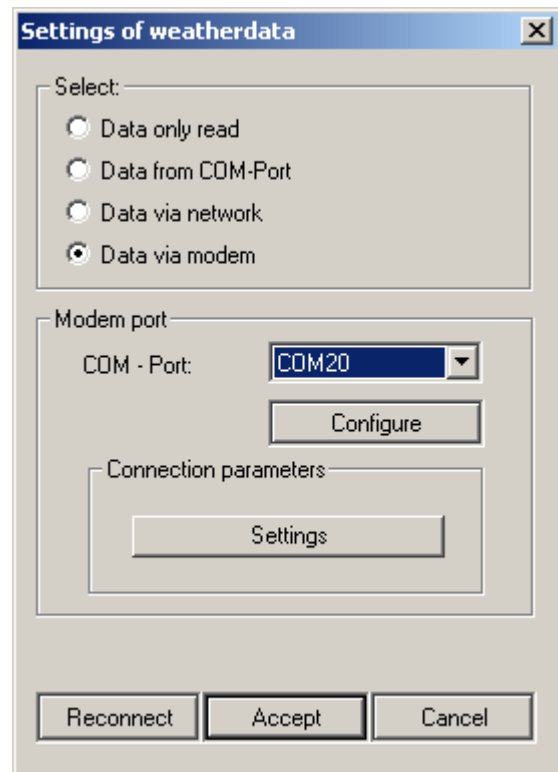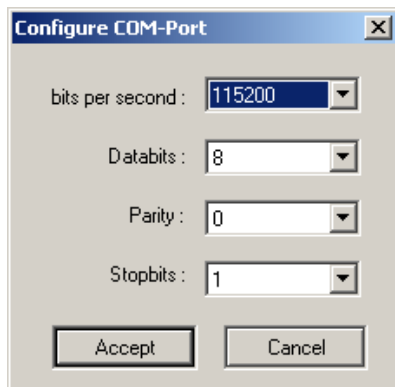
GSM parameter settings

Telephone number
This is the number of the SIM-card in the GSM900 module connected to the weather station.

Dial parameter
Parameters for establishing a connection via GSM or modem.
Command before connecting: Allows to force the module to data mode if not perfomed automatically.
Dial command: Command for dialing a number.
Command when connected: Here you can insert a command which is executed after a connection has been established. Normally not required!
Details about the AT commands you'll find here:
AT command reference (when CD is inserted) or
AT command reference (in the WEB)

Timeout dial up
Disconnects an setablished connection after the selected time.

Log-file: *A lof-file generally is created!*
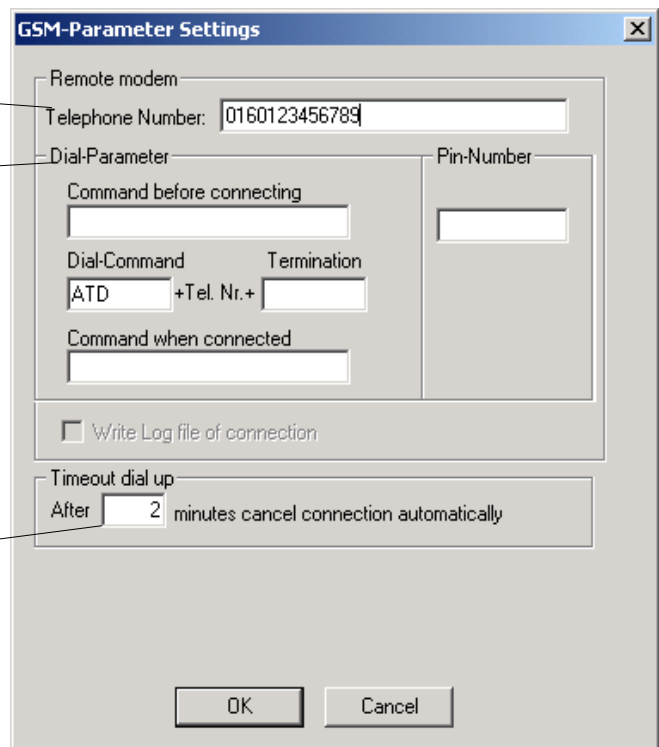
2.1.8 Time set ?
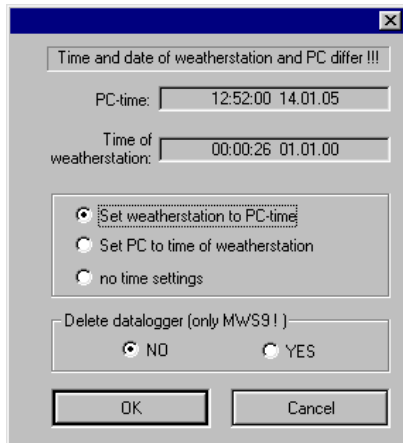
When the software was started with parameter -NO, the software compares the clock of the weather station to the computer's clock. If there is a difference of more than 10 minutes, an error-message appears and you ought to set the time by PC clock.

If a MWS9 (not MWS9-5) is connected, you need to selsect **Delete datalogger**, for otherways data with wrong time / date may be read and cause errors!

If you have connected a GPS-receiver to your weather station for setting the time base, you should select set PC to GPS-time for GPS time is very accurate. (PLEASE NOTE, THAT GPS RECEIVER DOES NOT SWITCH TO DAYLIGHT SAVING TIME, BUT ALWAYS USES UTC TIME!).

CAUTION: The GPS receiver needs to be connected to the weather station before power is applied to the unit, for other-ways the weather station does not recognize the GPS receiver and no time setting is performed!

Another problem may occur if the GPS receiver was disconnected for a longer time and it's internal batteries got weak. Time then is wrong when power is applied again until the GPS receiver has synchronized with satellites. Due to this data with wrong time stamp may be stored into the logger and lead to errors when reading the logger. So please always make sure that the GPS receiver is connected to power and internal clock is synchronized with satellites before connecting it to the weather station for time settings.

No time settings is not recommended!

When the software is started without parameter, the weather station's clock is automatically set when time at stratup deviates more than the value set in the weather32station.ini under [MaxTimeDiff.

Example: sekDiff=60 leads to setting the weather station's clock when the comptuer's clock and the clock of the weather station differ for more than 60 seconds.

2.2 File menu

2.2.1 New

Creates a new windows for grapical display. with rightclick into the empty window you open the menu for time period and sensor selection.

2.2.2 Print

Opens the printer menu

2.2.3 Close

Closes the weathersoftware.

2.2.4 Show Terminal

Opens a terminal window, in which the datastrings of the weather station are directly displayed. You also can send single commands to the weather station in this window.

Details next page.
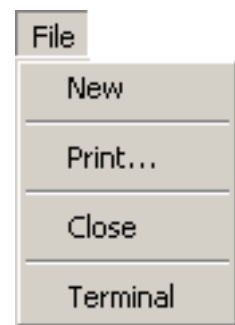
2.2.4.1 The terminal window

Here an example of a terminal window: }

In this window you can directly see the data transmitted by the weather station on the serial port.
You also can directly send single commands to the weather station with the SEND-key.
In the example shown below, the command !?0 was sent to the weather station and the reaction was the output of the config data.
The commands you'll find in the technical appendix of each weather station's manual.

With STRG + A the content of the window can be copied to the clipboardand then be inserted in a textfile to store the content.

Edit
Allows copying the content of this window into the clipboard.

Commands
In this menu you can create and save commands for controlling the weather station. These commands then can be sent to the weather station with one mouse click.

The Terminal Window
All data received at the COM-port are displayed in the window.

Command line
Here you can insert commands and send them to the weather station by clicking the send button.

Terminal

Edit   Commands

```
11:35:46, 19.03.09, TE30.52, WR130.87, WG0.00, WS0.00, WD0.00, WV-099997.00
11:35:48, 19.03.09, TE30.52, WR130.95, WG0.00, WS0.00, WD0.00, WV-099997.00
11:35:50, 19.03.09, TE30.52, WR130.57, WG0.00, WS0.00, WD0.00, WV-099997.00
11:35:52, 19.03.09, TE30.52, WR130.57, WG0.00, WS0.00, WD0.00, WV-099997.00
11:35:54, 19.03.09, TE30.52, WR130.57, WG0.00, WS0.00, WD0.00, WV-099997.00
11:35:56, 19.03.09, TE30.52, WR131.03, WG0.00, WS0.00, WD0.00, WV-099997.00
11:35:58, 19.03.09, TE30.52, WR131.10, WG0.00, WS0.00, WD0.00, WV-099997.00
<!?0>{13}{10}
{13}{10}
*+ MWS/EZ V2.41 +*{13}{10}
DA: 00255{13}{10}
DI: 32793{13}{10}
DV: 00350{13}{10}
ME: 01024{13}{10}
MU: 00013{13}{10}
MI: 00150{13}{10}
OD: 00006{13}{10}
A#: 00305{13}{10}
ER: 00100{13}{10}
FL: 00192{13}{10}
PM: 00000{13}{10}
PS: 00001{13}{10}
SC: 00005{13}{10}
TZ: 00001{13}{10}
AT: 00000{13}{10}
HZ: 00000{13}{10}
TA: 00000{13}{10}
KM: 00001{13}{10}
IF: 00010{13}{10}
11:36:00, 19.03.09, TE30.52, WR131.17, WG0.00, WS0.00, WD0.00, WV-099997.00
11:36:02, 19.03.09, TE30.49, WR130.95, WG0.00, WS0.00, WD0.00, WV-099997.00
```

`!?0`   `Send`

SEND Button
Sends the command in the Command Line.

2.2.4.2 Command Settings

In this menu you can set and store up to 8 different commands for controlling the weather station. You can save the response of the weather station in a file automatically. This can be very helpful in case of problems. The file then can be sent to REINHARDT to check the configuration of the weather station for example.
You also can set the duration for writing the response into the file.

User 1-8
8 command labels are available for adding commands to control the weather station. The command set you'll find in the manual "MWS5_M_Shortdocu. pdf" on the CD.

Save response in file
When activating this checkbox, the response of the weather station will be stored into a file.

Filename
Here you insert the name of the file in which the response is stored.

Timeout in Sec.
This is the time the file will be kept open for storing the response.

Command settings

User 1:	!?0 ☑ Save response in file
	info.txt Timeout in Sec. 3
User 2:	!w ☐ Save response in file
	Timeout in Sec.
User 3:	☐ Save response in file
	Timeout in Sec.
User 4:	☐ Save response in file
	Timeout in Sec.
User 5:	☐ Save response in file
	Timeout in Sec.
User 6:	☐ Save response in file
	Timeout in Sec.
User 7:	☐ Save response in file
	Timeout in Sec.
User 8:	☐ Save response in file
	Timeout in Sec.

Save   Cancel

2.3 Edit menu
(also rightclick into a graphical window (popup-menu))

2.3.1 Sensor / Timeperiod selection
For selection of which sensors should be displayed and which timeperiod is to be set in the active graphical window.

Insert the desired period of time in hours up to current time.

Listing of all the available sensors (real and virtual sensors).
Here you can select the sensors for each window.
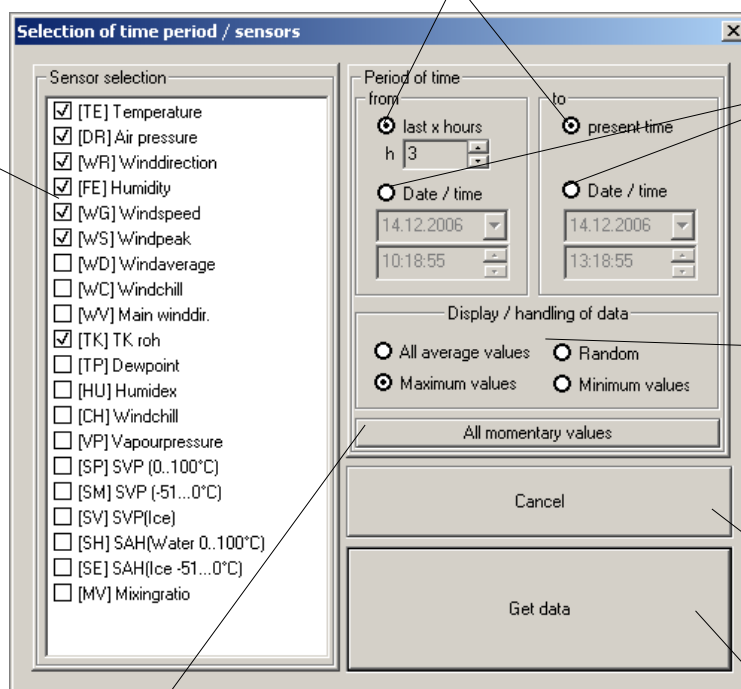
Insert an individual pe-riod of time
<u>Caution</u>: *For the selection*
from *Date / time*
to *present time, the maximum period to display is one year.*

*Select, if you want **Minimum** values, **Maximum** values, **Average** values or **Random** values to be displayed in the graphical window.*

Cancels without saving

Reads data from the selected period of time

All momentary values *- Shows all the latest data (up to 366 values)*
The time-axis depends on the data-frequency of the weather station.

2.3.2 Show single values
Click here to create a vertical measure bar which allows you to see the values of all graphs of the active window at the same time. They are displayed in the respective digital display with time and date.
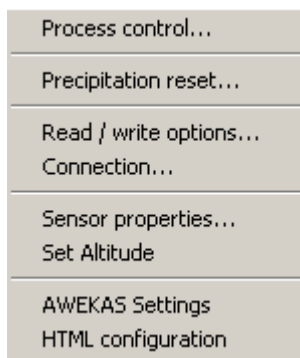
2.3.3 Unity scale

If you have displayed more values with the same unit in one window, their value-axes have the same scale if,UNITY SCALE is selected.
Overlayed graphs can be compared more easily (i.e. windspeed, wind average and windpeak) in this way.

2.4 Setup menu
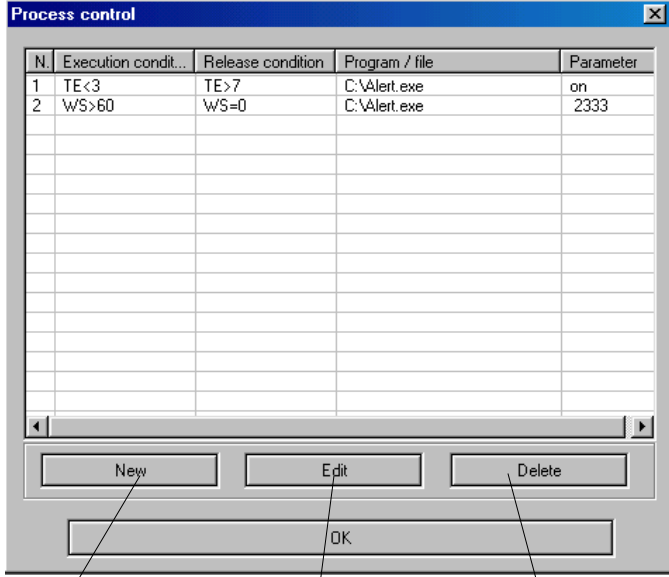
Process control...

Precipitation reset...

Read / write options...
Connection...

Sensor properties...
Set Altitude

AWEKAS Settings
HTML configuration

2.4.1 Process control

In this menu you can start programs, open files (soundfiles, pictures, movies,...) or control hardware (relaiscards, control mechanisms;...) with suitable software, dependent on measured values. This allows you to generate extensive process controls.

2.4.1.1 Menu Process Control

N.	Execution condit...	Release condition	Program / file	Parameter
1	TE<3	TE>7	C:\Alert.exe	on
2	WS>60	WS=0	C:\Alert.exe	2333

New   Edit   Delete

OK

Create new process   *Edit existing process*   *Delete selectedd process*

2.4.1.2 Process controll new
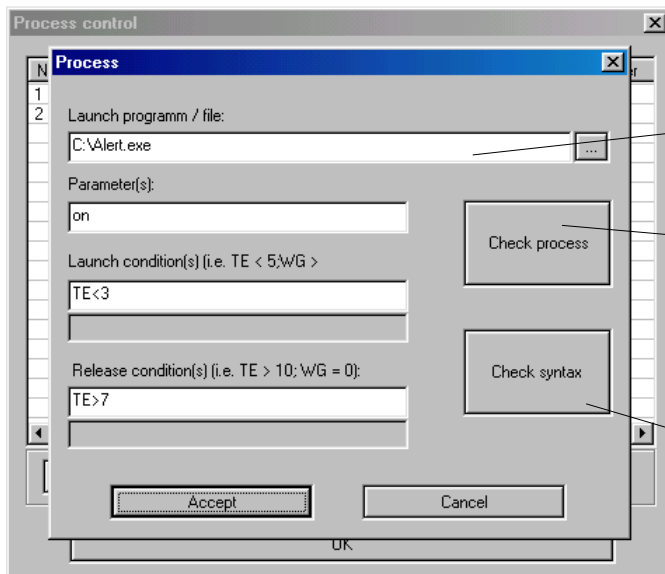
Selection of program / file
Will be executed when launch condition(s) are true

Check process *Check by mouseclick, if the process is running*

Check syntax *Checks the syntax of the conditions on errors*

2.4.1.3 Launch program / file

The file, which is inserted here, will be opened if the launch condition is true. The file may be an executable (exe, com, bat,..), a soundfile (wav. mp3,...) a Picture (bmp, jpg, tif,...) or any other kind of file which is linked with a windows-application.

2.4.1.4 Parameters

Here you can type the necessary parameters for the file to be opened.

2.4.1.5 Launch condition(s)

These are the conditions for launching the program in the **launch program / file** line.
Here you may insert only one or more conditions, separated by semicolon (i.e. WG > 50;WR <45;WR>315;).
The conditions are always linked with AND.
Sensorlabels (i.e. TE, WG,...) may be all labels listed in SENSOR PROPERTIES (sensors of weatherstation or virtual sensors)

Standard Sensorlabels are:

DR - Air pressure, FE - Humidity, RE - Precipitation, SO - Sun, TE - Temperature
UV - UV-radiation (or Light intensity), WC - Windchill, WD - Windaverage,
WG - Windspeed, WS - Windpeak, WR - Winddirection,
WV - Main Winddirection,
ZA - Additionalsensor A, ZB - Additionalsensor B, ZC - Additionalsensor C

2.4.1.6 Release condition(s)

This setting is very important! With this setting you avoid that the process is executed infinitely...
Only if this condition was true, the process can run another time.
Valid operators are : <, > and =.
You may use different conditions, separated by semicolon.
The conditions are always linked with AND.

Details:

If your launch condition is TE<3, the process is started when the temperature falls below 3°C. If you have inserted no release condition, the process is started again, if the next dataset contains a temperature below 3°C,....
Maybe this is wanted, if an alert shoud be given as long as the temperature is below 3°C, but mostly it is annoying or dangerous, if a process (software) is started every 2 seconds (with MWS 5M)....
To avoid this, there is the release condition.
This allows an execution of the process not before the release condition was true for at least once.

Example:

If your launch condition is TE<3, you should place a release condition like TE>7.
The process will be started once the temperature falls below 3°C the first time.
Then the process is blocked, until the release condition (TE>7) is true. Then the process will be started again, when the temperature falls below 3°C. (Hysteresis of 4°C)

2.4.1.7 Sending an email

You may want to send an email when measured values dropping below or exceed a definite value. To perform this, you may use a commandline email client like sendemail.exe which you can start when a process is triggered.

This tool you can download at: http://caspian.dotconf.net/menu/Software/SendEmail/

When sending an email you may attach the file "AKTWERT.HTML" which contains a set of all current weather data. This file is written each time the weather stations writes into it's logger and also, when a process is triggered.

2.4.2 Precipitation reset

Sets the precipitationsensor to zero.
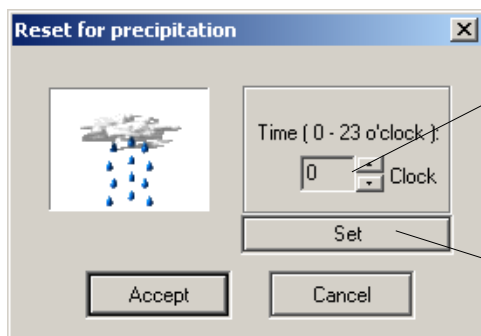
Point in time for precipitation reset.
Possible values 0..23 o'clock.
Sensor with logger perform their own
precipitation reset, sensors without log-
ger are resetted by the software via the
serial port at the selected point of time.

SET
*Resets the precipitationsensor by
mouseclick. Only valid for sensors
without logger.
Sensors with logger are not resettable
via the COM-port.*

2.4.3 Write / Read options

Settings for datahandling and storage

(See also 2.1 Start menus)

*Choose the folder, in
which the weatherdata
are stored.
IMPORTANT: The path
must start with a drive
letter, \\ is not possible!*
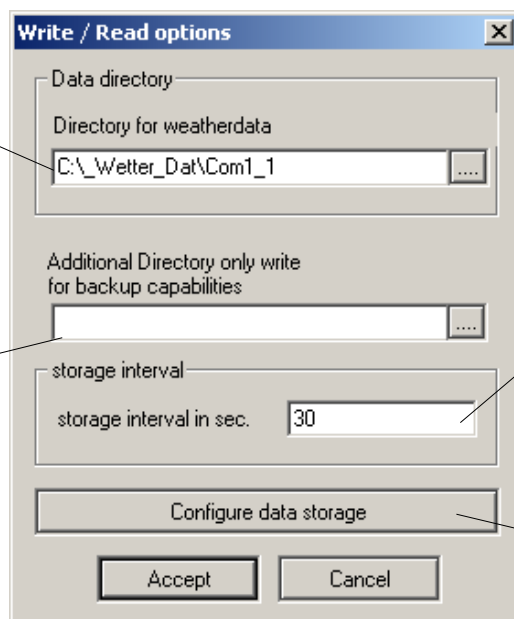
*Choose the desired storage-
interval in seconds.*
MWS9 : *min. 10sec and
multiples of 10 sec. up to
1800sec (30min)*
***MWS 5MV, MWS9-5, Sen-
sors with and without log-
ger*** : *min. 10sec. and multip-
les of 2 sec. up to 129600sec
(36 hrs)*

Additional Directory
*for data storage. If you
want to store date in
a 2nd folder, you can
insert the path in here!*
Please note: *Data
into this folder are only
stored, NOT checked
like in the folder above!*

*expanded settings for data
storage
(see also 2.12. Configure
data storage)*

2.4.4 Connection

Settings for COM-port and connections.

Data only read
If you only want to read already stored data (i.e via a network)

Data from COM-port
Aweather station is connected directly to a COM-port

Select the COM-port the weather station is connected to.

Menu for connection problems

Tries to connect with current settings immediately .

Accepts the settings and uses them at the next startup.
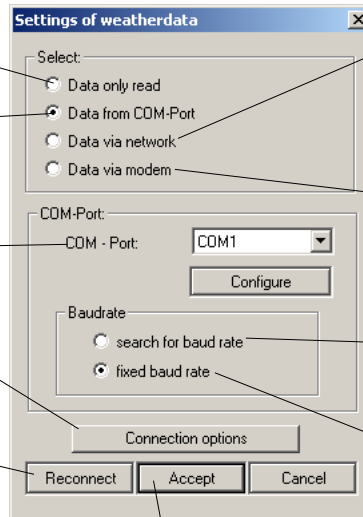
Data via network
When the data are raed via a network or the WEB. (weather station has got an IP-address)

Data via modem
When a GSM-PC-module or a modem is connected.

Tries to find the BAUD-rate automatically.

Uses the selected BAUD-rate (recommended).

(See also 2.1 Start menus)

2.4.5 Sensorproperties

Sensors of the weatherstation - *Listing of all real sensors, directly given by the weatherstation.*
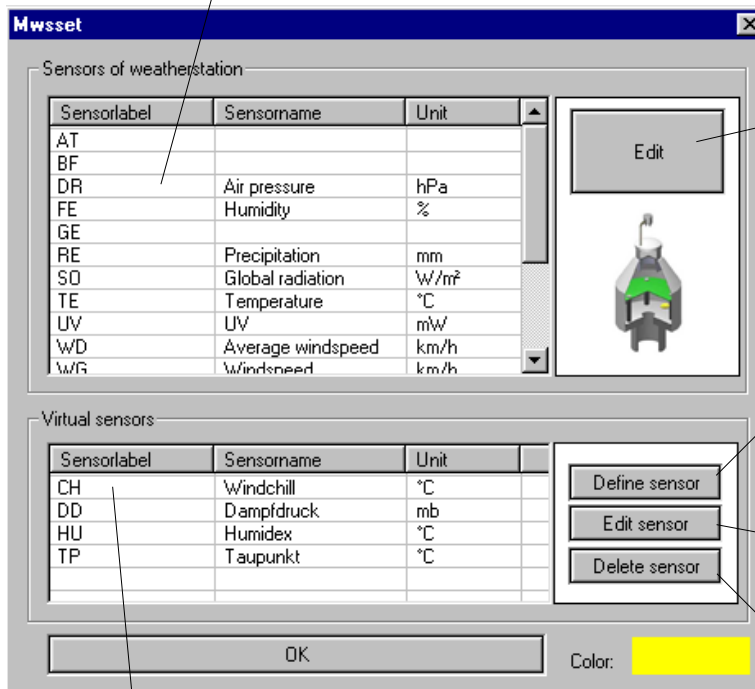
*Edit the properties for the real sensors.
(see also :
2.4.5.1 Sensordefinition)*

*Define virtual sensor.
(See also :
VIRTUAL SENSOR)*

Edit virtual sensor.

Delete virtual sensor.

*Listing of all virtual sensors.
These are sensors which are calculated out of real sensors by formulas
(i.e. dewpoint calculated with temperature and humidity)*

2.4.5.1 Virtual sensor

2.4.5.1.1 Sensor definition

In this menu you can perform all settings of your (virtual) sensors. Sensors do exist in hardware, virtual sensors are calculated values.
The Sensordefinition by sensorlabel makes it easy to tell apart the sensors.
Selected Area:

Internal name
Sensorname in uncoded text

Units selection

Input of formula
for virtual sensors

Minimum scale, Maximum scale, consider minimum consider maximum
Insert the minimum and maximum values for scale in the graphical window Maximum, Minimum, Average. Choose, which statistic values are to be displayed in the digital display.

Sum - standard
simply adds all values

Sum - accumulating
i.e. for precipitation

Sum - Sun
considers the time -axis

Sum/h
i.e. rain per hour

Label of virtual sensor
(2 capital letters)

Measured value's lower limit and upper limits

Function's help
Explanations of the most important mathematical functions you can use for formulas.

Formula test
Checks the formula on logical errors

Allows display of winddirection in an azimuth scale.

Choose the kind of chart (dots or lines) and the colour of the graph.

Tendency of sensor either in a fixed interval or displayed time-axis

Duration of sensor-activity
- Activity-Threshold: i.e. for sun activity
- Activity-Delta : i.e. for precipitation

Closes the window and stores the settings

Cancel without saving

The y-axis shows only the area which is needed by the measurement graph. This causes a good resolution of the graph

Complete Area:
The y-axis shows the full area which is set under Minimum and Maximum Scale. This causes a poor resolution of the graph

Minimum Scaling and *Maximum Scaling*, *Consider Minimum* and *Consider Maximum* set the value area on the Y-axis that is displayed.
The following statistical values can be selected in the digital display:
Digital display maximum, digital display minimum, digital display average, digital display sum (Sum - standard, sum - accumulating, sum - sunshine), digital display activity (Activity - threshold, activity - delta, delta / threshold), digital display tendency (in the set period of time, in time basis, time basis)

2.4.5.1.1.1 Special case pressure sensor / barometric pressure

Our sensors and weather stations are measuring the absolute pressure. To reduce the pressure measurement to sea level you insert the altitude (see 2.4.6) and you'll get the barometric pressure. Unfortunately there are different formulas to calculate the barometric pressure. Our weather stations don't consider the ambient temperature and humidity, but other formulas do, so that there are different results when calculating the barometer.
To create a virtual pressure sensor considering the temperature and humidity you can insert a suitable formula in the virtual sensor menu.
One example you'll find here:
http://en.wikipedia.org/wiki/Barometric_formula#Density_equations

To insert the formula into the virtual sensor formula input field you type this formula:
DR*EXP((9.80665*altitude)/(287.05*((TE+273.12)+0.12*(0.01*FE*6.10780*EXP((17.08085*TE)/ (234.175+TE)))+0.0065*(altitude/2)))), where altitude is the altitude of the location of your weather station.
Enclosed in this formula is the formula for the vapour pressure:
0.01*FE*6.10780*EXP((17.08085*TE)/(234.175+TE))

This formula is already predefined in the virtual sensors menu under the identifier BT (Baro[TE]) with the altitude 635m. For your purposes you only need to change the value of the altitude.

Please not that the temperature in the vapour pressure formula is in °C, all other temperatures in the formula are in kelvin!
When using virtual Pressure sensor, you unconditionally need to set the altitude in the software to 0, for otherways you'll get wrong values for the virtual barometric sensor!

2.4.5.1.2 Unit Selection

Under *unit selection* there is a list of units you can use instead of the standard units.
If a requested unit is not available or an existing unit is flawed, you can delete existing units or create new ones under *edit unit*.
In our example, the unit degree Fahrenheit (°F) for temperature is missing and is created.
Select the **units group** for temperature.
Edit unit opens the window for the unit properties.
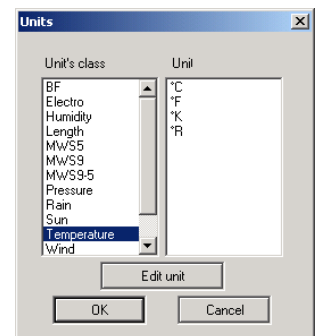
2.4.5.1.3 Edit Units

The *New* button creates a new unit and opens the window below:

Enter the unit (°F), its factor and the offset to the standard unit (°C) and confirm with *ready*.

Note:
The factor is considered first and then the offset.
If this is not suitable with your requested new unit, you create it with a new virtual sensor.
Activate *Delete* to delete a unit.

2.4.5.2 Settings for azimuth scale

Selection of sensor for display at the circle's edge (sensor2).
Best selection is WV (main winddir.)

Here you should insert the windaverage (WD) or the windspeed (WG)

Dialog

Select Sensor1:
WR Winddirection

Select Sensor2:
WV Main winddir.

Select Sensor3:
WD Windaverage

☑ Fade out Sensor1 if Sensor3 = 0.

View Sensor1

View Sensor2

View Sensor3

OK   Cancel
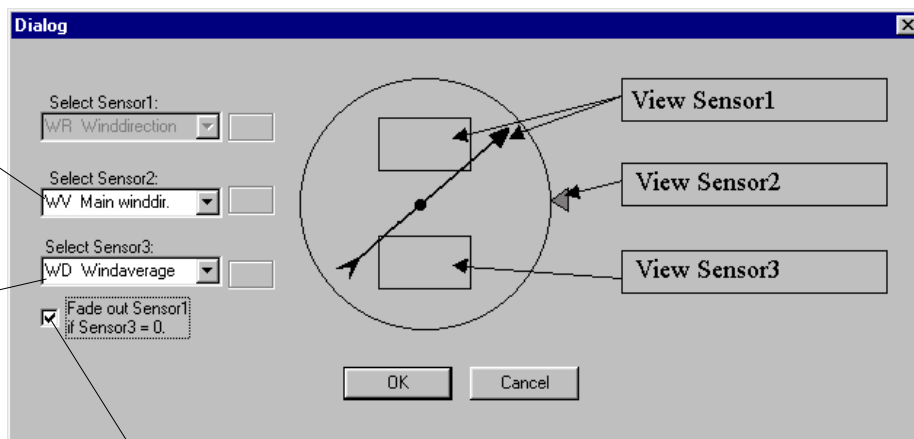
Display of winddirection is repressed, if sensor 3 (Windspeed) = 0.

2.4.5.3 The azimuth scale

Windrose ("Winddirection")

N
NW   NO
104deg
W   O
104deg
SW   SO
S
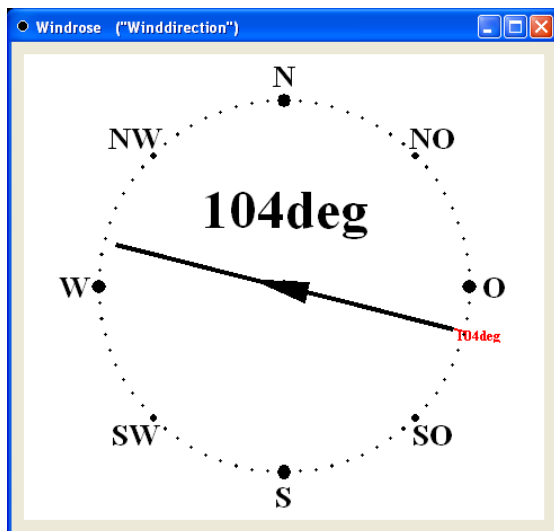
This shows the winddirection in an azimuth scale.

The winddirection and the windspeed are displayed with their values in the azimuth scale.

The main winddirection is displayed as slave pointer at the outer circle of the azimtuh scale. The grey area shows the area with was covered by the windvane within the last seconds.

Caution: Heavy gusts may cause rotation of the windvane which causes wrong display of the windvane area!

2.4.6 Setting the altitude
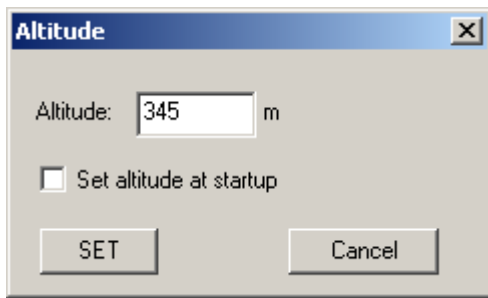
With this menu you can set the weather station's altitude for measuring the barometric pressure.

By entering the altitude of the weather stations position and then pressing the SET button, the altitude is sent to the weather station. From this time the unit will send the barometric pressure.

CAUTION: There are different possibilities to calculate the barometric pressure from the absolute pressure. Our calculation does not include the temperature!

If you'd like to calculate the barometric pressure considering the temperature, you may create a virtual sensor and add an alternative formula for calculating the barometric pressure.

More information you'll find here: http://en.wikipedia.org/wiki/Atmospheric_pressure and http://en.wikipedia.org/wiki/Barometric_formula.

CAUTION: When calculating the the barometric pressure with a virtual sensor using the altitude, you unconditionally must set the altitude to 0 in the menu above, for otherways the altitude is calculated twice and you'll get wrongvalues!

Please also consider that the stored pressure in the logger and in the data sets are always the values sent by the weather station and not the values of the virtual sensor!

2.4.7 HTML Configuration
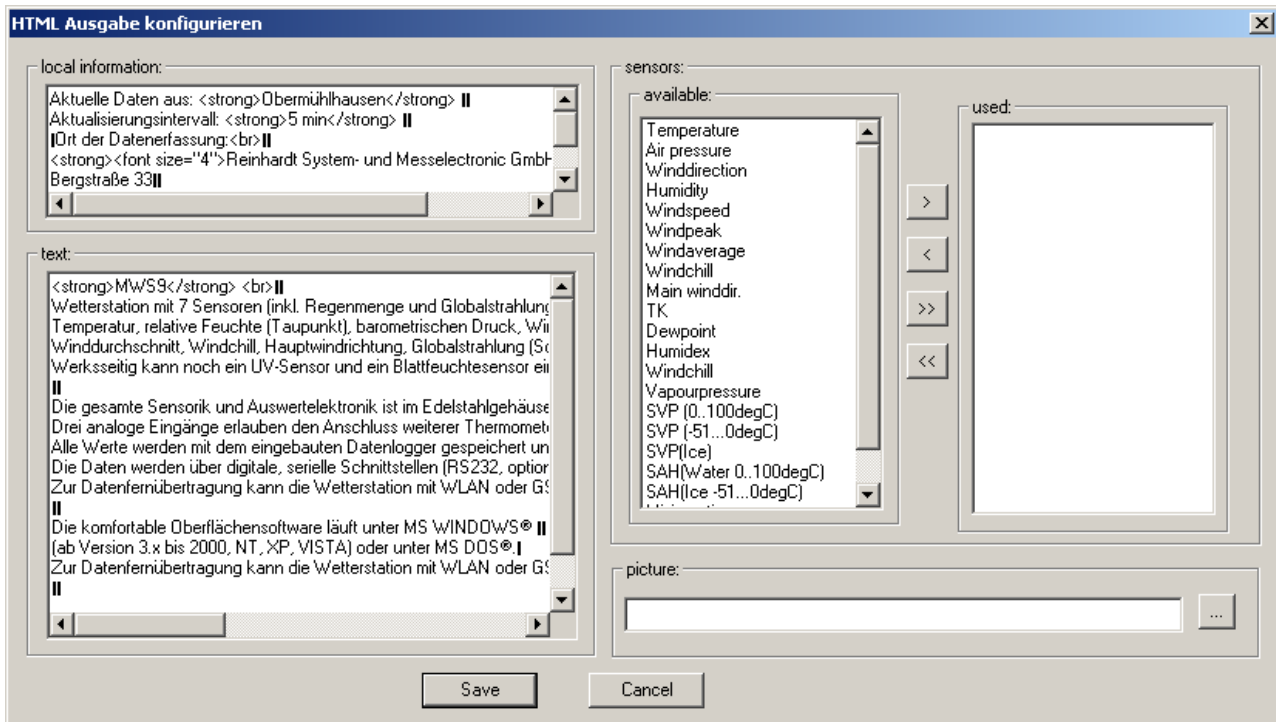
The software is writing an additional file (AktWert.html) onto the harddisk each time a new dataset is written, containing the current weather data and other free configurable infos.

With this menu you can configure the content of the file AktWert.html.

You also can choose a picture (jpg,...) which is added to the exported HTML-file.

2.4.8 AWEKAS settings

AWEKAS is a free automatic weather map system in the WEB.

You can add your own weather station with the REINHARDT software (since version 3.21) into this system and load data to the AWEKAS system perodically.

The upload interval is the storage interval set under SETUP / READ-WRITE OPTIONS.

Each time the software writes a dataset onto the harddisk, a complete dataset is uploaded to AWEAKAS too, if the checkbox "Activate AWEKAS" is active.

(Please note that the minimum upload interval AWEKAS allows is 5 minutes!)

To perform this you need to create a user account on AWEAKS first.

You need to select the corrct weather station under "type of weather station" and the REINHARDT software under "Report mode".

After creating your account you'll receive a mail containing an activation key. After activating your account, you may check the connection to the AWEKAS server by clicking on the CHECK CONNECTION button.

When using a proxy you need to set the check box HTTP PROXY and fill in the correct settings.

When Activate AWEKAS is selected, the software will transmit a current dataset within the selected storage interval (minimum 5 minutes) to the AWEKAS server.

The link to the AWEKAS system is:
http://www.awekas.at

When activating AWEKAS a file named awekas.ini will be created. This file contains all your AWEKAS settings.
CAUTION: Also your access data for the AWEKAS server are included in this ini file and they are NOT encrypted!
In addition a log-file (AwkasLog.txt) records the data traffic with the AWEKAS server.

When checking the connection to the AWEKAS server is OK, a message like this should appear.

Important is the OK right here!

2.5 View menu
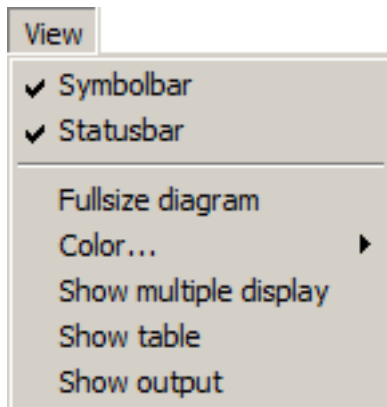
2.5.1 Symbolbar

- Disable or enable the symbolbar.

2.5.2 Statusbar

- Disable or enable the statusbar.

2.5.3 Fullsize diagram

- Creates a fullsize diagram (The graphical window has not got a frame and the graph fills the whole window.

2.5.4 Color

- Background : Sets the background colour of the graphical window.
- Grid : Sets the grid-colour.

2.5.5 View multiple display

(versions 3.03 or later)
To enable the multiple display, click **View** and **Show multiple display**.
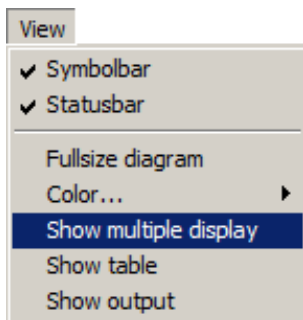
This is the multiple display:
It contains the azimuth scale and 5 additional sensors you can configure as you want.
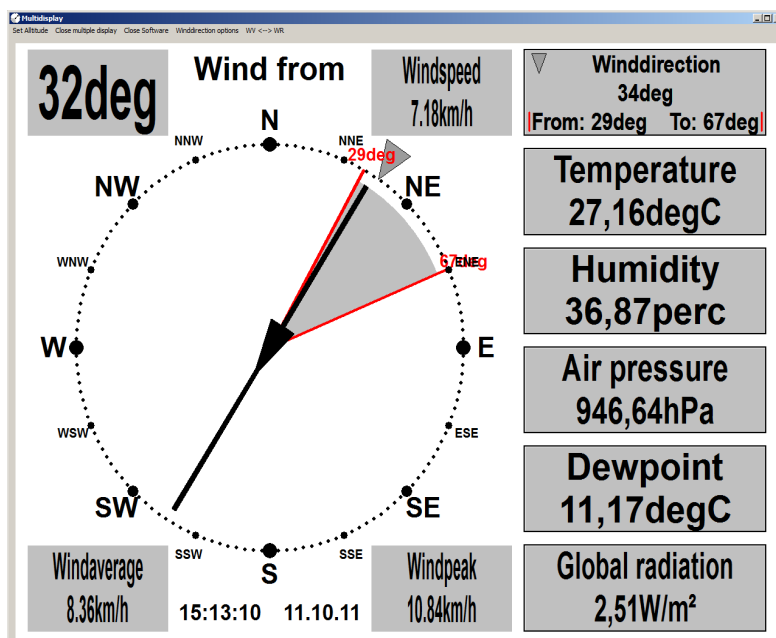
2.5.5.1 Color selection of multiple display

For colorselsection of the multiple display click into the background
of of the multiple display. The menu for color selection opens. You
can change the color of the background, the color of the tiles and
the textcolor.

2.5.5.2 Sensor selection of multiple display

For allocation of sensors to the 5 measurement values, perform a rightclick into the desired measure field.

The menu for the senorselection appears.

All registered sensors, defined under **Setup** and **Sensor properties**, will appear in this menu for selection (real and virtual sensors).

Choose the desired sensor by mouseclick. The selected sensor is now marked green, all others red.

Do the same for all 5 measurement fields, to adjust the multiple display just as you like.
The mesurement tiles for the windparameters cannot be adjusted for they have fixed settings.

After exit and restart of the software, the multiple display is switched of. To start it again, select **View** and **Multiple display**. It will appear with the settings you performed the last time.
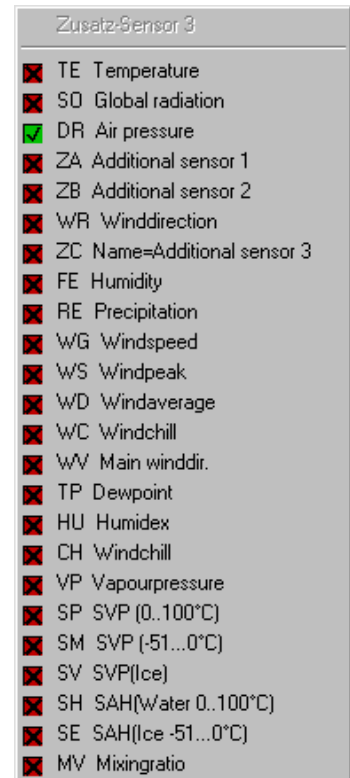
2.5.5.3 Settings in the multiple display
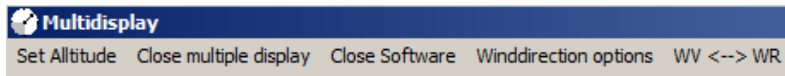
The multiple display contains some menu items for setting the altitude, closing the multiple display and closing the whole software.
There is also the possibility to set the mode for display the winddirection in 3 different modes:
Full resolution, in steps of 5 and in steps of 10.
Further more you can select if wind direction (WR) or main wind direction (WV) is displayed as arrow with its value in the upper left corner of the multiple display .

For setting the altitude this menu is available.
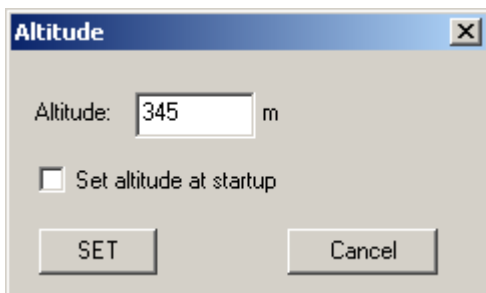
Here you can set the altitude in metres and transmit it to the weather station by clicking the SET button. The weather station now sends the barometric pressure (QNH). When activating the checkbox SET ALTITUDE AT STARTUP, each time the software is started the altitude will be tranmitted to the weather station. This may be useful if the weather station is used at different locations.

2.5.6 Show table

(since version 3.1)
You can activate a table view by **View** and **Show table**.

View
✔ Symbolbar
✔ Statusbar
Fullsize diagram
Color…   ▶
✔ Show multiple display
Show table
Show output
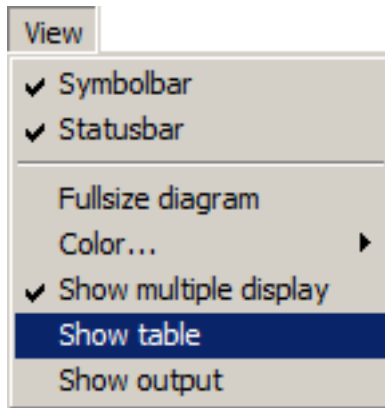
It looks like follows:

| View list					_ □ ×
Save					
Datum	Uhrzeit	Temperature°C	Humidity%	Air pressurehPa	
2006-09-15	09:10:00	0.84 °C	70.11 %	929.32 hPa	
2006-09-15	09:15:00	0.58 °C	69.55 %	929.48 hPa	
2006-09-15	09:20:00	0.07 °C	61.27 %	929.32 hPa	
2006-09-15	09:25:00	-0.25 °C	70.67 %	929.17 hPa	
2006-09-15	09:30:00	-0.10 °C	78.48 %	929.32 hPa	
2006-09-15	09:35:00	0.17 °C	72.46 %	929.32 hPa	
2006-09-15	09:40:00	0.45 °C	75.09 %	929.48 hPa	
2006-09-15	09:45:00	0.58 °C	71.24 %	929.48 hPa	
2006-09-15	09:50:00	0.66 °C	71.15 %	929.32 hPa	
2006-09-15	09:55:00	0.68 °C	70.86 %	929.48 hPa	
2006-09-15	10:00:00				
2006-09-15	10:05:00	0.71 °C	70.02 %	929.32 hPa	
2006-09-15	10:10:00	0.73 °C	67.95 %	929.64 hPa	
2006-09-15	10:15:00	0.71 °C	69.08 %	929.48 hPa	
2006-09-15	10:20:00	0.71 °C	67.38 %	929.48 hPa	
2006-09-15	10:25:00	0.73 °C	71.52 %	929.48 hPa	
2006-09-15	10:30:00	0.66 °C	70.02 %	929.48 hPa	
2006-09-15	10:35:00	0.66 °C	65.50 %	929.32 hPa	
2006-09-15	10:40:00	0.68 °C	67.19 %	929.32 hPa	
2006-09-15	10:45:00	0.68 °C	64.18 %	929.17 hPa	
2006-09-15	10:50:00	0.68 °C	64.47 %	929.32 hPa	
2006-09-15	10:55:00	0.68 °C	64.18 %	929.17 hPa	
2006-09-15	11:00:00	0.68 °C	63.43 %	929.32 hPa	
2006-09-15	11:05:00	0.68 °C	64.47 %	929.32 hPa	
2006-09-15	11:10:00	0.68 °C	62.87 %	929.48 hPa	
2006-09-15	11:15:00	0.68 °C	65.12 %	929.32 hPa	

2.5.6.1 Storing data in EXCEL-Format

In the table view all data are listed which are used to create the graphs in the graphical measurement window.
These are NOT the data stored on the harddisk, but only the data used to draw the graphs in the software window.

To create CSV-files (EXCEL-compatible files), you choose "save" and then "save as "csv"". Then you name the file to store it.

Please note that this file does not contain all datsets the stored datafile (i.e.02_2010.mws) contains. To create CSV-files containing all stored data set, please use the menu item **Tools** and then **CSV-Converter**.
CAUTION: This does not work under 64-bit operating systems!

View list					
Save					
save as ".csv"	Uhrzeit	Temperature°C	Humidity%	Air pressurehPa	
Exit	09:10:00	0.84 °C	70.11 %	929.32 hPa	
2006-09-15	09:15:00	0.58 °C	69.55 %	929.48 hPa	
2006-09-15	09:20:00	0.07 °C	61.27 %	929.32 hPa	
2006-09-15	09:25:00	-0.25 °C	70.67 %	929.17 hPa	
2006-09-15	09:30:00	-0.10 °C	78.48 %	929.32 hPa	
2006-09-15	09:35:00	0.17 °C	72.46 %	929.32 hPa	
2006-09-15	09:40:00	0.45 °C	75.09 %	929.48 hPa	
2006-09-15	09:45:00	0.58 °C	71.24 %	929.48 hPa	
2006-09-15	09:50:00	0.66 °C	71.15 %	929.32 hPa	
2006-09-15	09:55:00	0.68 °C	70.86 %	929.48 hPa	
2006-09-15	10:00:00				
2006-09-15	10:05:00	0.71 °C	70.02 %	929.32 hPa	
2006-09-15	10:10:00	0.73 °C	67.95 %	929.64 hPa	
2006-09-15	10:15:00	0.71 °C	69.08 %	929.48 hPa	
2006-09-15	10:20:00	0.71 °C	67.38 %	929.48 hPa	
2006-09-15	10:25:00	0.73 °C	71.52 %	929.48 hPa	
2006-09-15	10:30:00	0.66 °C	70.02 %	929.48 hPa	
2006-09-15	10:35:00	0.66 °C	65.50 %	929.32 hPa	
2006-09-15	10:40:00	0.68 °C	67.19 %	929.32 hPa	
2006-09-15	10:45:00	0.68 °C	64.18 %	929.17 hPa	
2006-09-15	10:50:00	0.68 °C	64.47 %	929.32 hPa	
2006-09-15	10:55:00	0.68 °C	64.18 %	929.17 hPa	
2006-09-15	11:00:00	0.68 °C	63.43 %	929.32 hPa	
2006-09-15	11:05:00	0.68 °C	64.47 %	929.32 hPa	
2006-09-15	11:10:00	0.68 °C	62.87 %	929.48 hPa	
2006-09-15	11:15:00	0.68 °C	65.12 %	929.32 hPa	

2.5.7 Show output

(since version 3.23)
You can activate a the output window by **View** and **Show output**.
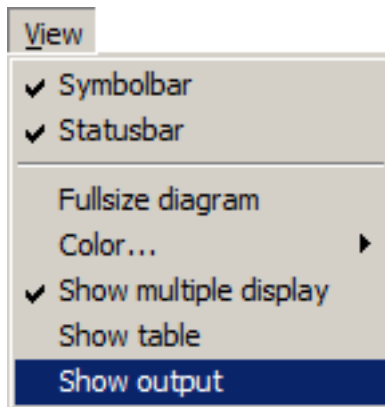
In this windows all commands sent by the computer to the weather station are listed. Additional comments arre added to show if sending of commands was successful (i.e. received station's reply). This can be very helpful when communications problens occur.
By clicking on *Copy to clipboard* the whole content of this window is copied to the clipboard and then can be pasted into any text file for documentation.

Here you see some possible content of the output window:
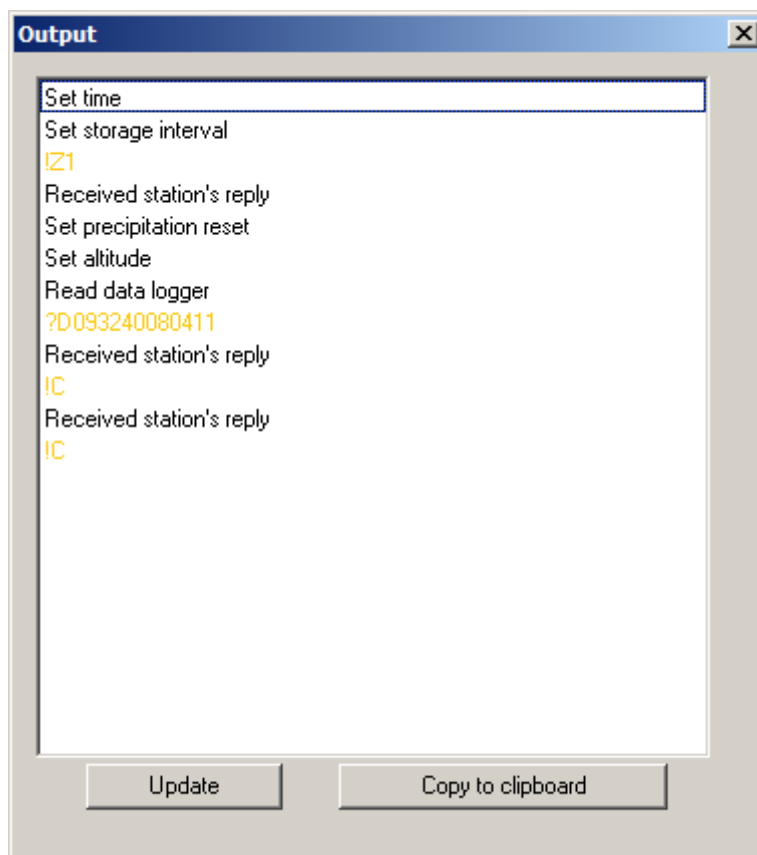
This page is left free for further expansions!

2.6 Window menu

Select between:

2.6.1 New window
- Creates an empty new window.

2.6.2 Close
- Closes all active windows.

2.6.3 Overlap
- Overlaps the opened windows.

2.6.4 Tile
- Tiles all the opened windows.

2.6.5 Arrange symbols
- Arranges the minimized windows (symbols).

- Below you may switch between the listed windows.
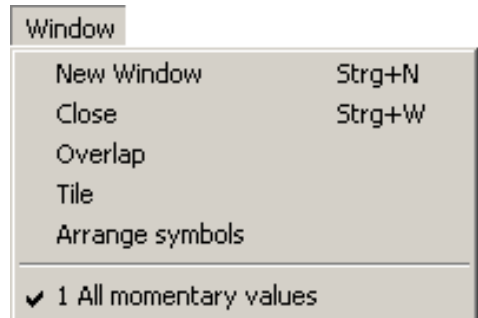
2.7 Tools menu

2.7.1 CSV-Converter
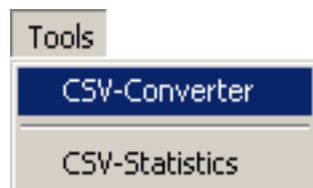
CAUTION: This does not work under 64-bit operating systems!
By selecting **CSV-Converter** all weatherdata stored in the folder selected under **Setup** and **Read / Write options** as **Directory for weather data** will be converted into CSV files (EXCEL compatible).

This Converter is an external program which is stored in the folder **Daten** in the weather software directory. To perform converversion into CSV-files, this converter (CSV_CV.EXE) must be stored in the same folder as the weather data files. So if you change the weather data path, you also must copy the file CSV_CV.EXE into this folder to perform CSV-conversion!
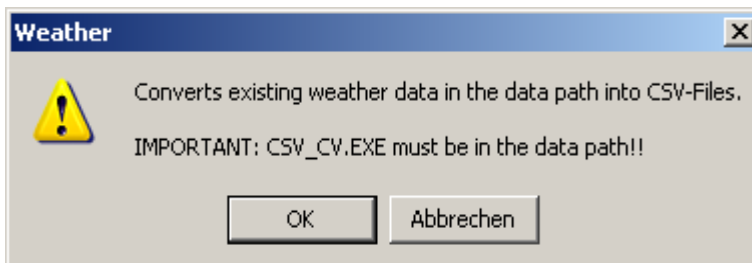
2.7.2 CSV-Statisics
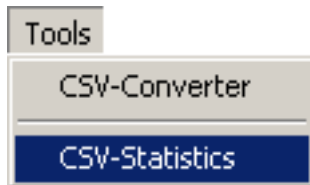
CAUTION: This does not work under 64-bit operating systems!
By selecting **CSV-Statistics** all weatherdata stored in the folder selected under **Setup** and **Read / Write options** as **Directory for weather data** will be converted into a CSV statistic-file (EXCEL compatible).
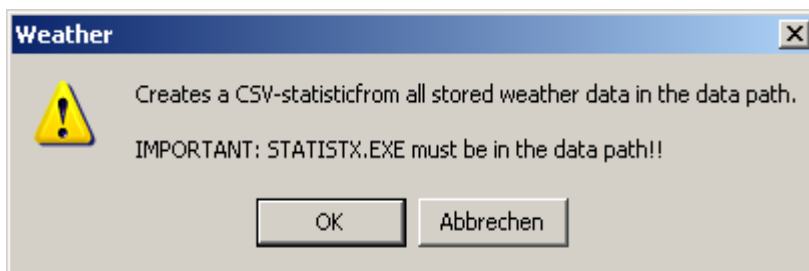
This Converter is also an external program which is stored in the folder **Daten** in the weather software directory. To perform converversion into CSV-statistics, this converter (STATISTX. EXE) must be stored in the same folder as the weather data files. So if you change the weather data path, you also must copy the file STATISTX.EXE into this folder to perform CSV-statistics!

2.8 Help menu

Here you can choose between:

2.8.1 Help items
Opens this PDF-document.

2.8.2 Info about weather
Information about Reinhardt and this software.
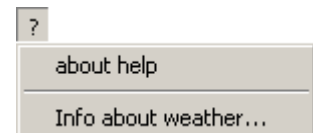
2.9 The Symbolbar

With the icons in the symbolbar, you reach the most important items faster than with the menus.
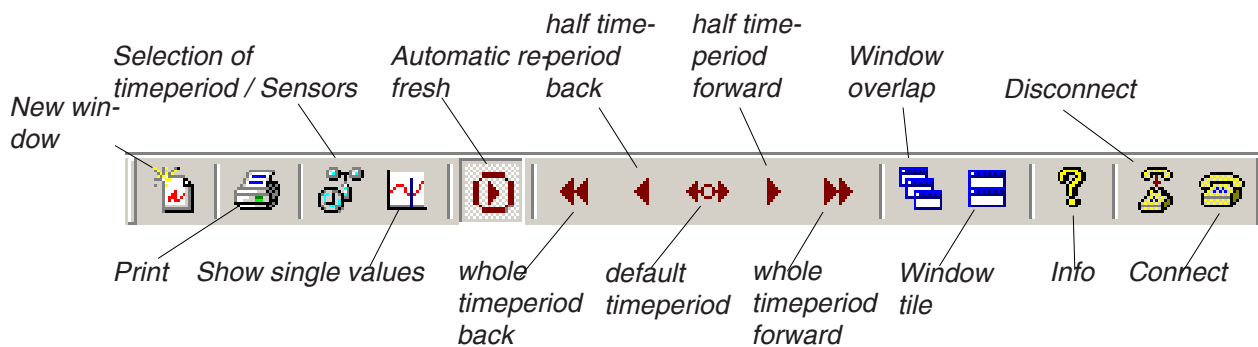
2.9.1 New window
Creates a new empty window.

2.9.2 Timeperiod and sensorselection
Opens the menu Timeperiod and sensor selection.

2.9.3 Show single values
Creates a vertical measure bar (mouse-controlled) which allows to get the data of all graphs in the active window at the same time, displayed in the respective digital display with time and date.

2.9.4 Print
- Opens the printer menu.

2.9.5 Automatic refresh
- The new data are automatically displayed in the diagram.

2.9.6 whole timeperiod back
- Shifts the measure windows back for a whole timeperiod.

2.9.7 half timeperiod back
- Shifts the measure windows back for a half timeperiod.

2.9.8 default timeperiod
- Displays the graph in the active window in the default timeperiod.

2.9.9 half timeperiod forwards
- Shifts the measure windows forward for a half timeperiod.

2.9.10 whole timeperiod forward
- Shifts the measure windows forward for a whole timeperiod.

2.9.11 Window overlap
- Overlaps the windows.

2.9.12 Window tile
- Tiles the windows

2.9.13 Disconnect
- Disconnects an established connection.

2.9.14 Connect
- Establishes a connection with the settings in the connection menu

2.9.15 Info
- Shows information about the weather software.

2.10 The Popup Menu

You get this menu by rightclick into the graphical window.
Here you select:
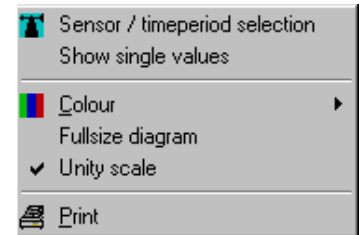
2.10.1 Timeperiod and sensor selection
- Opens the menu Timeperiod and sensor selection.

2.10.2 Show single values
- Creates a vertical measure bar (mouse-controlled) which allows to get the data of all graphs in the active window at the same time, displayed in the respective digital display with time and date.

2.10.3 Color / grid - Color / background
- Background : Sets the background colour of the graphical window..

- Grid : Sets the grid-colour.

2.10.4 Fullsize diagram
- Creates a fullsize diagram (The graphical window has not got a frame and the graph fills the whole window.

2.10.5 Unity scale
- If you display more values with the same unit in one window, their value-axes have the same scale if
UNITY SCALE is selected.
Overlayed graphs can be compared more easily (i.e. windspeed, wind average and windpeak) in this way.

2.10.6 Print
- Opens the printer menu.

2.11 The graphical display window

The measured values are shown in a line or dot diagram.

Sensorname   *Displayed period of time*   *Sensorname*

Scale

Data graphs
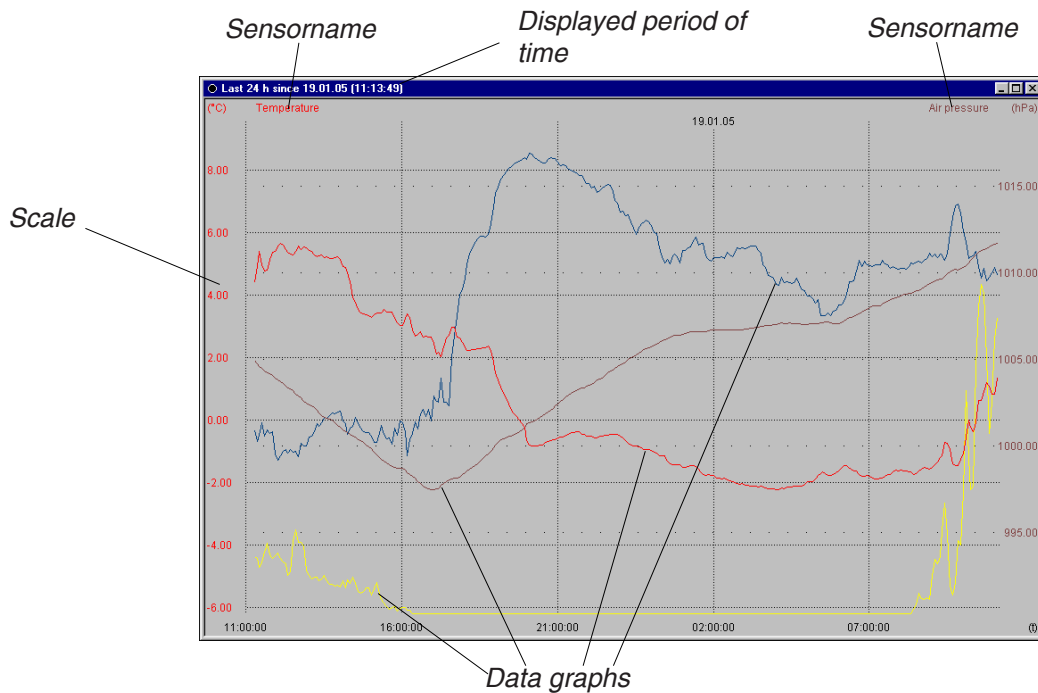
In the graphical window the measured values are displayed as single graph or multi graphs in one window.

The time axis (x-axis) is the base for all graphs in the respective window. The value axis (y-axis) is adjustable individually for each sensor with the sliding regulators in the pulled down **digital value display**. The area of the value axis you can set in the **Sensor properties** menu.

If you have displayed more than 2 sensors in one window, the active sensor's scale is displayed at the left edge of the window. On the right edge the scale of the last active sensor is displayed.

<u>**Caution!**</u>

Do not open more than 4 windows, for the recources of the soft ware will increase and the software will work very slow.

2.12 The Digital display

This display shows the momentary value of a sensor, except the endpoint of the time-axis is not

Sensor name

Details on /off

current measured value

12.98 °C

Unit

Maximum value with time / date
max: 12.98 °C 16:00:12 22.04.03

Minimum value with time / date
min: 12.29 °C 15:57:36 22.04.03

Average value Average: 12.55 °C

Tendency Tendency: 0.69 °C

Y-Scale:

Y-scale
Resolution of Y-axis

Graph offset:

Graph offset
Offset of graph
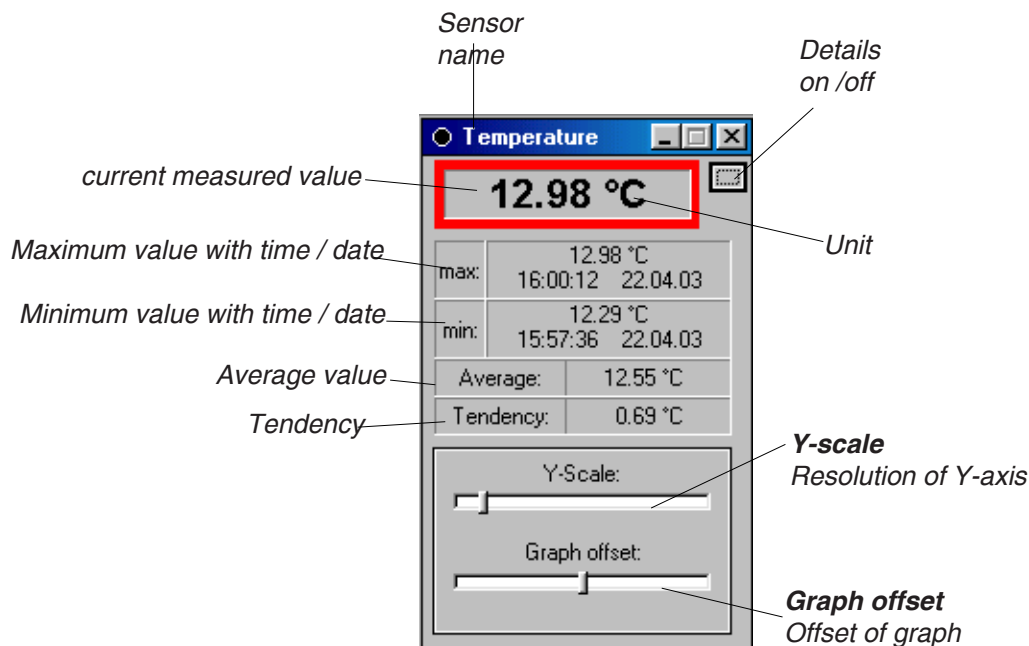
the current time.
By clicking onto the measured value the sensor's color can be changed. So you can set different colors (also possible by opening the **Sensor properties** menu).
This window you can open up 2 times.
In the first step additional statistical values (set in the **Sensor properties** menu) are displayed. (maximum , minimum and average values, tendency, ...).

In the second step 2 sliding regulators allow setting of resolution and offset of the graph.

2.13 Setting of line thickness

In the Ini-file (**weatherstation.ini**, or **MWS9e32_wrstation.ini**) the line thickness can be changed under **[Display]** and **Linienstaerke=**, to get thicker lines or dots in the graphical display. By default the value 1 is set there. When you change the value and store the ini-file, the changes take effect immediately, you don't need to restart the software.

Example:
Linienstaerke=1   Linienstaerke=4
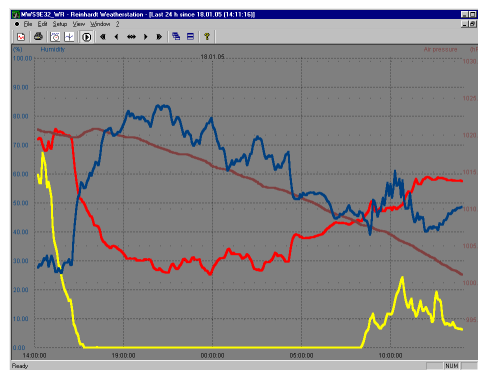
2.14 Automatic setting of clock when starting up

Weather32 software sets the weather station's clock automatically at start up or when devitation is more than 2 minutes while running, when the software is started without parameter.

When starting up with the parameter -NO the following message occurs and the software is waiting for a mouseclick on the OK-button for setting the clock. Without mouseclick, the clock of the weatherstation is not set and no datastoring in the logger is performed.

To control the behaviour of the software in case of clock devitation there are 2 parameters:

2.14.1 Parameter for automatic setting of the clock

Automatic setting of the clock at software startup is possible when a devitation of time or date is detected, either of the PC's clock or the weather station's clock:

To perform this you create a link to the exe-file of the weather software (WEATHER32.EXE) and expand the link with the desired parameter, i.e.: WEATHER32.EXE   -PC.

2.14.1.1 Parameter -PC

(Not any more necessary since version 3.17)

-PC: when this parameter is used, the software sets the clock of the weather station to the PC's time and date if the devitation exeeds the value stored in the MWS9e32_WRstation.INI under [MaxTimeDiff].

(Since Version 3.03)

This parameter also causes setting the time of the weather station while the software is active and the weather station's clock derives more than 60 seconds. This is useful i.e. when daylight saving time is changing the clock. (Since Version 3.12).

2.14.1.2 Parameter -GPS

-GPS: this parameter sets the PC's clock to weather station's time and date without a time-error message. This only makes sense if the weather station has got a GPS-receiver for correct time setting! (Since Version 3.1).

CAUTION: UNDER VISTA THIS PARAMETER ONLY WORKS WHEN SOFTWARE IS RUN "AS ADMIN"!

This parameter also causes setting the time of the computer while the software is active and the computer's clock derives more than 60 seconds. (Since Version 3.12)

CAUTION: Plaese note that the GPS-receiver always sets the time to UTC-time and does not support daylightsaving / wintertime changes!

UTC-time is 2 hours late in summer and one hour late in winter compared to MEZ.

You can set a time-zone for the weather station with the command !ZZx, where x is the number of hours which is added to UTC-time when a GPS-receiver is used.

So please only use this parameter if your computer does not automatically sets the winter or daylight saving time!

2.15 Logfile when errors occur (ErrLog.txt)

The software for sensors <u>without logger</u> create an error-log-file (ErrLog.txt) when dataerrors occur. In this log-file timepoint and kind of error is stored. Earlier versions displayed a permanent error message (i.e. **!P** or **No weatherdata**) which has to be clicked away by the user. The disadvantage in this case was, that storing of data stopped for the time the error message was active.
Version same or newer than 2.26 show an error message only for the duration of the error. When data come again, the message closes automatically and storing of data proceeds.

2.16 Logfile at startup (log.dat)

When starting up, the software for <u>weatherstations with logger</u> creates a log-file (**log.dat**) in which the communications between host and weatherstation while startup is stored. With this file you may find the cause of problems in cases of malfunction of the software or the weatherstation. **Caution!** This log-file is overwritten each time the software is restarted. When having problems save or rename this file to keep it!

2.17 Quit the software by checkbox

Sometimes it may be better when the software asks if you really want to quit the software.
You can enable a checkbox when you quit the software.
To enable this checkbox you open the file **WEATHER32station.ini** with any texteditor and set the item Abbruch like follows:
[Display]
Abbruch=1

Then you save the file. From now on the software shows this checkbox when being closed:
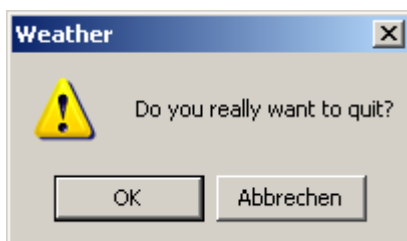
2.18 Error message write error

When storing data in a network, it may happen that a network resource fails.
If the software then tries to write data into a not existing folder, this error message appears showing the failing path. This error message also appears if the desired path is write protected. Ensure, that the displayed path exists and that it is not write protected!
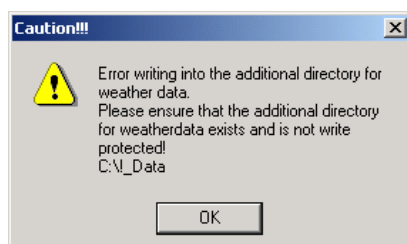
3. Contents of software (32-bit)

3.1 WEATHER32.EXE (MWS9E32.EXE, MWS9E32_WR.EXE)

WEATHER32.EXE is the main component of the weathersoftware, the executable.

3.2 WEATHER32.PDF (MWS9E32.PDF, MWS9E32_WR.PDF)

WEATHER32.PDF is the manual of the 32-bit weathersoftware.

3.3 WEATHER32.TXT (MWS9E32.TXT, MWS9E32_WR.TXT)

WEATHER32.TXT contains the help files for the online help with F1 key.

3.4 WEATHER32DEFINE.INI (MWS9E32DEFINE.INI, MWS9E32_WRDEFINE.INI)

WEATHER32DEFINE.INI contain all informations and settings of the existing sensors (real sensors) listed under the **sensor properties** in the **setup** menu.
This contais i.e. the sensor's units, lower and upper limits, colors, ...

3.5 WEATHER32INTERN.INI (MWS9E32INTERN.INI, MWS9E32_WRINTERN.INI)

WEATHER32INTERN.INI contains informations and settings for all calculated sensors (virtual sensors) listed in the **sensor properties** in the **setup** menu.

3.6 WEATHER32STATION.INI (MWS9E32STATION.INI, MWS9E32_WRSTATION.INI)

WEATHER32STATION.INI contains infomations about the hardware setting of the like COM-port, Baudrate,...

3.7 WEATHER32UNIT.INI (MWS9E32UNIT.INI, MWS9E32_WRUNIT.INI)

WEATHER32UNIT.INI contains all units you can assign to the sensors under :
Setup / Sensor properties / Edit.

3.8 WEATHER32TERMBEFEHL.INI

WEATHER32TERMBEFEHL.INI contains all commands of the terminal command settings menu.

3.9 FORMULAS.TXT

FORMULAS.TXT contains some already implemented formulas for creating own virtual sensors.

3.10 HUMIDEX.EXE

HUMIDEX.EXE is a small DOS-tool to calculate the humidex from temperature and humidity.
Does not run under 64-bit operating systems!

3.11 CSV_CV.EXE

Converts Reinhardt weather data (04_2007.mws,...) into EXCEL compatible CSV-files
Does not run under 64-bit operating systems!.

3.12 STATISTX.EXE

Creates EXCEL compatible statstic files from Reinhardt weather data (04_2007.mws,...).
Does not run under 64-bit operating systems!

3.13 Weather data

Files with suffix "mws" contain weather data in ASCII format. File format is mm_yyyy.mws, i.e. 07_2008.mws for weather data of July 2008.
These files are stored in the folder set under SETUP and READ / WRITE OPTIONS.

3.14 CSV-Weather data

These files are created from weather data by the CSV-Converter and contain weather data in CSV format, compatible to EXCEL.

File format is mm_yyyy.csv, i.e. 07_2008.csv for weather data of July 2008.

These files are stored in the same folder as weather data.

3.15 AKTWERT.MWS

This is a textfile containing the latest set of weather data. This file is always written new when the weather data are updated.

This file is stored in the same folder as weather data.

3.16 AKTWERT.HTML

This is a file in HTML format containing the latest set of weather data.

This file is always written new when the weather data are updated and when the process control is triggered.

This file is well suited to be sent via email to inform about current weather values.

4 Start-Parameters and ini-Files of Software (32-bit)

4.1 Start-Parameter

4.1.1 Parameter -PC

See Chapter 2.14.1

4.1.2 Parameter -GPS

See Chapter 2.14.1

4.1.3 Parameter -NO

Disables automatic clock settings when software is started and while software is running.
When theres a devitation in time or date while the software is active or on startup an error message appears and waits for a mouseclick to set the clock!
This parameter only is useful, when you are not sure if the computer's clock is OK and you want to check manually, if the clock is correct.
When using the software without any parameter, the clock always is set automatically by the computer's clock when there is a devitation of more than 2 minutes!
Without parameter theclock also is set when the software is active and the time changes from summer (DST) to wintertime.

4.1.4 Parameter -SILENT

Starts the software, reads the logger and closes the software automatically when ready.
This is useful to use the taskmanager to fill the datafiles automatically without the need to run the software permanently.

4.1.5 Parameter -!PR

This switch disables the commands !P (reset of windpeaks after each storage interval) and !R (reset of precipitation sensor (once a day)) when using sensors or weather stations without logger.
This prevents errors messages of the software when the sensor is not answering on commands of the software (sends no echo).

4.2 Ini-Files

4.2.1 WEATHER32station.ini (example)

```
[Serielle Schnittstelle]
Anschluss=COM1
Baudrate=9600
Datenbits=8
Paritaet=0
Stoppbits=2
AutoB=0
;0=find baudrate;1=fixed baudrate
[Speicherintervall]
Verzeichniss=C:\Wetter\Daten
Intervall/Sek=300
VerzeichnissZusatz=
[Programmstart]
Start=1
;0=Read from file only    ;1=Read from COM-port
[Dateninterpretation]
Mit_Speicher=0
;0=mit Speicher
;1=ohne Speicher
Daten_Speichern=0
;0=synchron
;1=nicht synchron
[Station]
Station=1
;0=Alte Stationen (ohne Speicher) , z.B. MWS5, Sensoren
;1=Neue Stationen (mit Speicher)
[Regen]
Reset=0
[Display]
Linienstaerke=1
Abbruch=0
[ZwischenSchritteY]
Anzahl=1
[ZwischenSchritteX]
Anzahl=1
[MaxTimeDiff]
sekDiff=120
;maximale zulässige Zeitabweichung zwischen PC und Wetterstation, bei der die Uhrzeit-Fehler-
meldung beim Softwarestart mit dem Parameter -NO noch nicht erscheint
[DataParams]
SettsID=1
;0=Nur lesen, 1=COM-Schnitstelle, 2=IP-Adresse
[TCP/IP Schnittstelle]
IP-Adresse=192.168.1.1
IP-Port=10001
[Speicher-ID]
ID=258
[Timeout]
Timeout=30
```

[Verbindungsabbruch]
Reconnect=10.000000
ReconnectTimeout=10.000000
ReconnectAktiv=TRUE
[**Ortshoehe]**
Hoehe=0
Aktiv=FALSE

4.2.2 WEATHER32define.ini (section)

[TE]
Name=Temperature
Unit=degC
Untergrenze Wert=-40.00
Obergrenze Wert=60.00
Min Skalierung=0
Max Skalierung=0
Anzeige Aktivitaet=nein
Anzeige Durchschnitt=ja
Anzeige Minimum=ja
Anzeige Maximum=ja
Anzeige Summe=nein
Anzeige Tendenz=ja
Zeitbasis Tendenz=3600
Anzeige Min-Skalierung=nein
Anzeige Max-Skalierung=nein
Farbe=255
Diagrammart=0
Skalierungsbereich=0
Diagramm Darstellung=0
Faktor=1.000000
Offset=0.000000
Ortshoehe beruecksichtigen=nein
Ortshoehe=0
Beaufort=nein
Aktivitaet Auswahl=0
Aktivitaet Wert=0
Auswahl Summe=0
Auswahl Tendenz=1

UnitGroup=Temperatur

[DR]
Name=Air pressure
Unit=hPa
Untergrenze Wert=500.00
Obergrenze Wert=1200.00
Min Skalierung=0
Max Skalierung=0
Anzeige Aktivitaet=nein
Anzeige Durchschnitt=ja
Anzeige Minimum=ja
Anzeige Maximum=ja
Anzeige Summe=nein

...and so on

4.2.3 WEATHER32intern.ini (section)

```
[Interne Sensoren]
iKennung=TP,HU,CH,VP,SP,SM,SV,SH,SE,MH,MV,
[TP]
Name=Dewpoint
Untergrenze Wert=-60.000000
Obergrenze Wert=60.000000
Farbe=3310797
Min Skalierung=0
Max Skalierung=0
Anzeige Aktivitaet=nein
Anzeige Durchschnitt=ja
Anzeige Minimum=ja
Anzeige Maximum=ja
Anzeige Summe=nein
Anzeige Tendenz=nein
Zeitbasis Tendenz=
Anzeige Min-Skalierung=nein
Anzeige Max-Skalierung=nein
Diagrammart=0
Skalierungsbereich=0
Formel=(234.175*LN(0.01*FE*EXP((17.08085*TE)/(234.175+TE))))/(17.08085-LN(0.01*FE*EX
P((17.08085*TE)/(234.175+TE))))
Unit=°C
FormelKennungen=FE,TE,


[HU]
Name=Humidex
Untergrenze Wert=-60.000000
Obergrenze Wert=60.000000
Farbe=1923298
Min Skalierung=0
Max Skalierung=0
Anzeige Aktivitaet=nein
Anzeige Durchschnitt=ja
Anzeige Minimum=ja
Anzeige Maximum=ja
Anzeige Summe=nein
Anzeige Tendenz=nein
Zeitbasis Tendenz=
Anzeige Min-Skalierung=nein
Anzeige Max-Skalierung=nein
Diagrammart=0
Skalierungsbereich=0
Formel=TE+5/9*(6.112*POW(10,(7.5*TE)/(237.7+TE))*FE/100-10)
FormelKennungen=TE,FE,
Unit=°C

...and so on
```

4.2.4 WEATHER32unit.ini (example)

```
[TE]
Name=Temperature
Unit=°C
Untergrenze Wert=-40.00
Obergrenze Wert=70.00
Min Skalierung=0
Max Skalierung=0
Anzeige Aktivitaet=nein
Anzeige Durchschnitt=ja
Anzeige Minimum=ja
Anzeige Maximum=ja
Anzeige Summe=nein
Anzeige Tendenz=ja
Zeitbasis Tendenz=3600
Anzeige Min-Skalierung=nein
Anzeige Max-Skalierung=nein
Farbe=255
Diagrammart=0
Skalierungsbereich=0
Diagramm Darstellung=0
Faktor=1.000000
Offset=0.000000
Ortshoehe beruecksichtigen=nein
Ortshoehe=0
Beaufort=nein
Aktivitaet Auswahl=0
Aktivitaet Wert=0
Auswahl Summe=0
Auswahl Tendenz=1
UnitGroup=Temperatur
NachKomma=2
Windrose=Disabled
Sens1Ausblenden=Disabled
```

All ini-files are only examples and may differ from yours!

E & OE Specifications subject to changewithout prior notice. 10/11