

# PC-Wetterstation

## Operating- and Data Acquisition Software

Status 2020-05-11

for Windows NT/2000/XP/Vista/Win7/Win8/Win8.1/Win10

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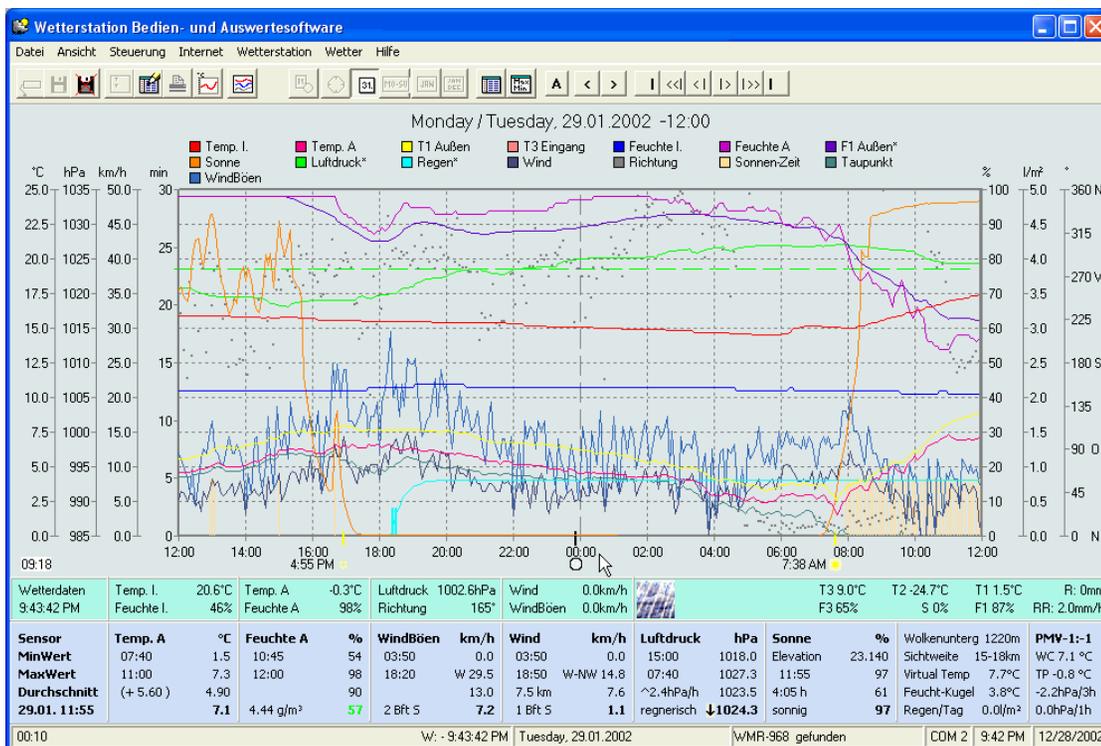
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# Preface

Observation of weather data is not only important on a global scale, but it can be also of local interest. This can range from simply displaying the current weather data to long-term observation and analysis of recorded weather data and even to responses to dropping below or exceeding defined values. The Wireless Weather Station offers all these possibilities in connection with the Operating- and Data Acquisitions Software as well as a PC wireless - interface.

Thus, the area of use of the Wireless Weather Station ranges from the private requirements up to industrial and commercial use, e.g. by country and forest landlord, boat and ship leader, the water resources management and organizers of open air events. Apart from measuring the indoor temperature and the relative humidity, up to 15 sensors and be connected for more temperature and humidity measurements. In addition, sensors are available for recording wind direction, wind speed, air pressure and rainfall.

The radio-sensors have a range of up to 100 m / 330 ft and allow thus a completely free and flexible installation. The sensors are supplied with current by an integrated module. Darkness and bad weather periods with relatively slightly sunlight are bridged by an accumulator. Therefore, maintenance of the sensors as a rule is not necessary. Finally all set in sensors are recognized by the Weather Station automatically and can thus be installed immediately.

While the Wireless Weather Station is informing about all current weather data and weather conditions (for example the air pressure tendency) continuously in a big display, the data can be recorded and analysed simultaneously with the Operating- and Data Acquisitions Software. For this all measured values of the Weather Station are transmitted automatically to the wireless-interface and stored there. The wireless-interface is then connected to a free serial interface. Then the data can be transmitted with the software to the personal computer.

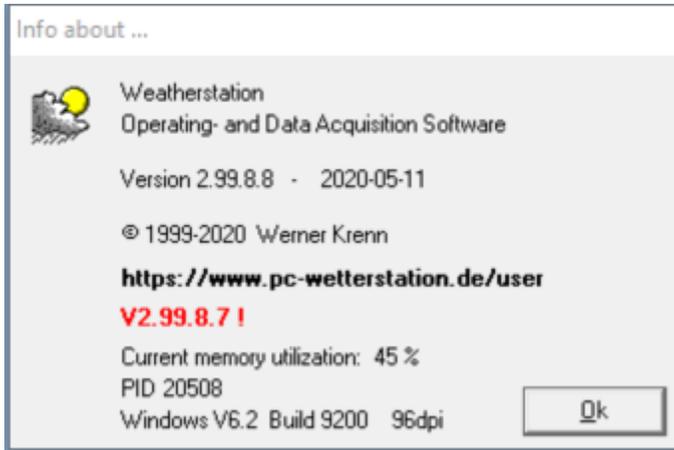
Thus the Wireless Weather Station makes it possible for everyone to conveniently and comprehensively observe and analyse weather data as well as react to specific weather conditions.

The **Weather Station WMR-918/928** does not need any additional wireless interface - it is equipped with a V24 interface for link-up with a computer.

However, for the write-out and evaluation of the weather data the computer must always be linked with the Weather Station and switched on.

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# About ...



© Werner Krenn 1999-2020

**email:**

[werner.krenn@pc-wetterstation.de](mailto:werner.krenn@pc-wetterstation.de)  
[werner.krenn@t-online.de](mailto:werner.krenn@t-online.de)

**Homepage:**

<https://www.pc-wetterstation.de>

Weather station-Side

**My weather data page:**

<https://www.pc-wetterstation.de/wetter/start.html>  
<https://www.pc-wetterstation.de/weather/start.html>

(German site - not always up to date!)  
(English site – only as example!)

\*\*\*\*\*  
Visit my WsWin-Forum <https://www.pc-wetterstation.de/forum>  
\*\*\*\*\*

**Help (this):**

If you needs a printable Help, you can download the wswinen.pdf – file from my Homepage and print it.  
<https://www.pc-wetterstation.de/wswinen.pdf>

#####  
New Versions:  
**Normally, it is not pointed out to newer versions.**

But you should inform me, if you changed your email address.  
#####

**Special thanks to:**

**Mischa Thurnherr**

he did the preparatory works for me for the [installation routine](#) and the [weather symbolic file](#).

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she did all the corrections for the English translation.

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for his informations for the connections at air pressure changes.

**The Moon/Sun-Calendar based on**  
**Andreas Hörstemeier, Author of the MoonKomponent**  
and/or  
**John Walker, Autor MoonTool and/or Home Planet, Schweiz**

Reference program for Sun/Moon:  
**GeoClock, Joe Ahlgren**  
A super program which I already long have.

\*\*\*\*\*

**Werner Krenn**  
**Lackenhaeuser 149**  
**D-94089 Neureichenau**  
**Germany**

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# Difference Weather Station / Wireless-Interface

The term “wireless interface” includes the following:

- ✓ ELV WS2000-PC V1.0
- ✓ ELV WS2000-PC V2.x
- ✓ Conrad WS7000
- ✓ Huger WMR 900H
- ✓ La Crosse WS-2010 ELV
- ✓ WS2500 V1.x
- ✓ ELV WS2500-PC V3.x
- ✓ La Crosse WS2510

Difference WS2000/WS2500:

- the WS2000 supports up to 16 Temp./Hum Sensors
- the WS2000 don't supports a Brightness Sensor
- the WS2000 Display Version did not inserted any data logger
  
- the WS2500 supports max. 9 Temp./Feuchte-Sensoren
- the WS2500 supports a Brightness Sensor (0..200 klux)
- the WS2500 Display Version has inserted a data logger for 1024 data records with fixed log interval from **15 minutes** -> **10 days 16 hours** Memory capacity
- the WS2500-PC has an adjustable log interval of **2..60(62) minutes**  
-> between **1day 10 hours 8 minutes ... 42 days 16 hours** of memory capacity  
(max. **44 days 2 hours 8 minutes** - at 62 minutes interval)

## PC-Weather Sensor Receiver

Can receive the signals of the **ELV weather sensor system** (and **OEM's**)

- up to 16 Temp./Hum Sensors
- supports a Brightness Sensor (0..200 klux)
- no data logger

## Weather station VantagePro (Weatherlink 5.x)

From V2.82.0, the VantagePro or more exactly the data file Weatherlink 5.x is supported.

It will support all sensors of the VantagePro with it.

However not all sensors, that are anticipated in the Weatherlink-Data file,:

- of the 8 practicable extra Temp. / Hum. Sensors are supported only 7
- of the 6 possible SoilTemperature/SoilMoisture-Sensors are supported only 4
- for UV and sun radiation is taken over the maximum-value of the storage interval.
- **Changes from V2.97.11:** according to the settings „Ø UV/Solar“ – so average values **there the new Weatherlink-Software V5.4 also supports the DAVIS weather stations: Monitor, Wizard, and Perception that this station are supported automatically!**

From V2.90.0 the **VantagePro** (from Rev. B - Firmware Apr. 24, 2002) and **VantagePro2** are also support in direct online-operation.

**Difference between Wswin and Weatherlink software in online operation:**

- the THSW value isn't calculated (should come)
- UV-MED values are not calculated (nor somewhere shown)
- Process all possible values, besides with extra-temperature / Hum a maximum of 7
- determines approximately all 30 sec the reception-data / -quality in the online-operation
- with WsWin you can set backlight on and off
- can set second-exactly the time/date in the Weather station
- shows all used data for barometer calibration
- shows all received data of the Weather station in Status
- shows all high/low values of the day, month and year in the Status
- can control all practicable console setting over WsWin
- can the EEPROM-data save, convert from VantagePro to VantagePro2 format and write back to station
- can represent the graph-data (24 each for hours, day, month, year and storm) of the station and store in a text file.
- allows storage intervals of 1-15 minutes – indepentend from the archiv interval

- allow the simultaneous operation of Weatherlink and WsWin over the Pause-operation
- can execute all settings of the weather station, equally like Weatherlink -> **can replace Weatherlink with it completely**

### Caution!

If you use an **USB-Data logger**, you must install "**CP210X USB to Virtual Serial Converter.exe**". You should find this file in the Weatherlink-Installation-folder as well as Weatherlink-CD (furthermore the file CP210xManufacturing.dll must exist in the same folder where you find this program!) or download

[http://www.davisnet.com/support/weather/download/CP210X\\_USB\\_Serial\\_Converter\\_ver2.exe](http://www.davisnet.com/support/weather/download/CP210X_USB_Serial_Converter_ver2.exe)

The **TCP/IP-Data logger** is momentarily supported only via the File-Watching mode. Or directly if one uses VirtualVP of Steve Hatched.

### Weather station WS2300 (WS2310/WS2320/WS2315)

This weather station is supported only over the function „File watching“.

That is, in addition, the Heavy Weather software must run and WsWin takes over „pseudo-Online the in each case stored dates from the Heavy Weather- dates file. The interval corresponds to the Heavy Weather software data file storage interval.

Recommendation: use a memory range between 2.. 15 minutes.

You can choose every arbitrary weather station. If you choose WM918 and/or WMR9x8, you save storage space, since the smallest data file is built here.

If you absolutely need **the air pressure dates with decimal places**, you must select **VantagePro** as a station.

### Weather station WS3600 (WS3650) or WS2800

This weather station is supported only over the function „File watching“.

That in addition the Heavy Weather Pro 3600 software must run and WsWin takes over „pseudo-Online the in each case stored dates from the Heavy Weather- dates file. The storage interval corresponds to the Heavy Weather Pro 3600 data file storage interval.

Recommendation: you use an interval **range** there between **1 .. 15 minutes**.

You should choose as Interface type **WM918** and/or **WMR9x8**, **because they have the smallest storage space consumption**; if you absolutely need the **air pressure dates with decimal places**, you must select **VantagePro** as weather station. Near these station also the wind gust are carried along, the **WS3600** supplies also the gusts of wind. With the WS2800, only the relative air pressure is found in the data file!

### The term “Weather Station” includes the Stations WMR-918/968/918N/928N and WM-918/WX200 (from Huger, Germany; Oregon Scientific, USA and more)

If the remark **Is valid only for ELV PC wireless interface** appears in the text, this includes of course also the PC Wireless Interface Huger WMR 900 H (OEM product) ), as well as the WS7000 by Conrad.

If only WMR-918 appears in the text, this includes also **the station WM-918** and/or **WMR 968=WMR-918N** - except if they are excluded explicitly.

An own data format is employed for the Weather Station WMR-918/918N/968/WM-918.

With "export" and/or "import" data can be exchanged between the two supplementary systems.

ELV software PC\_Wetter can also be Imported to both systems -

the WMR-918 also stores the data of the wind speed for wind gusts.

Furthermore, the import of log-files from Weather-display-software is possible.

The option " read out weather data automatically during the start" is unavailable at the WMR-918.

The option " close program automatically after read-out" is unavailable at the WMR-918.

The option " search for new sensors automatically during the start" is unavailable at the WMR-918.

The option "PC clock" synchronized with DCF will be handled differently - see corresponding help section.

Under "Wireless interface" and here “Adjustments”, the range of time is given how the data are supposed to be recorded - control range 1 minute until 15 minutes - 2 minutes is preset.

The display bar has a new function. Here the currently sent data are represented online by the Weather Station (provided that this bar is turned on) - sensor names and its values are represented automatically as soon as a value is obtained.

The status indicator of the WMR-918 contains the transfer time point and all data sent from the Weather Station WMR-918.

For operating the WMR-918 no specific sensor is necessary, any sensor will do. Furthermore, additional sensors are supported fully.

For rain calibration the value 1,000 is given, the overall-values sent by the Weatherstation WMR-918 are indicated directly in "mm".

If you use a modified [rain sensor](#), you must match the [rain calibrating-factor](#) correspondingly.

### **Climalogger TFA Data Recorder**

**(known also as Data Logger WS8610 - supports only 4 sensors)**

These data loggers for max 6 temperature-/humidity sensors is supported only over the function File-Watching. The program can control in this case the „TFA Data Recorder over the „Time controlling3“!

### **KLIMALOGG... pro (TFA Thermo Hygro Logger)**

This data-logger for 8+1 Temperatur-/humidity-sensors is supported over the function "File-Watching!

The program can steer this logger over the Timecontrol3!

### **TE923/TE923W (Mebus, Irox, Honeywell, TFA, Cresta, Conrad, Bresser, RSB) TE924/WXR-815/WXR-815LM/NEXUS/SINUS/PTM980/DV918/4Cast PC**

These stations are available in 4 hardware implementations.

(marked in the program with HW1..4 )

- **HW1:** Memory 8 KByte (208 records) - one can alter only the storage interval (5, 10, 20, 30, 60, 90, 120, 180, 240, 360, 1440 minutes) over computers
- **HW2:** as **HW1**. Additionally, one can over computers alters: Location altitude, temperature alarms, wind/rain-Alarm . As well, HW2 prepares real time data for picking up all minutes!
- **HW3:** available with different memory implementations (8kB, 32kB, 64kB and 128 kB), with Memory 128 KByte = 3442 records - otherwise like **HW2**
- **HW4:** as **HW3**  
additionally, one can alter over the computer the CityInfo for Local and Selected Settings and can also change Time Alarms, (Single-, Weekly- and Pre-Alarm).

#### ***Peculiarities in context with WsWin:***

If you receive an interface error at starting or changing to "with Interface", so a reason for this can be: the helper file "[usb.dll](#)" is not available in the WsWin program folder.

If an option is not selectable at this station, the hardware doesn't support this possibility.

With **HW2..4** you can choose in WsWin whether you want to use the real-time dates all 1 minutes or all 2 minutes or the possible datalogger ranges (5, 10, 20, 30, 60...)

**To heed:** if the chosen storage interval exceeded one year of "storage duration", WsWin don't allows these selection! (with the 3442 data records the duration would reach up to the year in 2016)

- WsWin restricts the max. Ultraviolet-value to 25.5 UV-!!
- With chosen option (default: ON) WsWin converts the ultraviolet values onto values similar to the VantagePro.
- Always the original values firmly held as "UV X" (id=9), with not chosen option are Ultraviolet and Ultraviolet X identical.
- WsWin observes the sent wind chill values as temperature value (id=8), this value is back-calculated as value without Wind influence (id=7).
- Difference temperature (id=10) is formed from the out door temperature (main outdoor sensor = dewpoint sensor) and sensor ID=7.
- This value is planned for recording of sunshine duration.

#### **From Windows 8.1 on this Station are not more found – Solution:**

... this Operation System „sends“ the USB-Devices immediatly in the power saving mode ...

**You should be firm in editing or changing inside the Windows registration (Regedit) !  
... and of course implementation at own risk and responsibility**

Search in the registration for

[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Enum\USB\VID\_1130&PID\_6801\5&32dda442&0&1\Device Parameters]

- the blue marked entry is **variably**, accordingly even, where the USB-Station is/was connected

Under this Reg-key (or keys too – if the Station was connected for testing on different ports ) are this entries set to "0" (instead of 1):

"SelectiveSuspendEnabled"=dword:00000000

"EnhancedPowerManagementEnabled"=dword:00000000

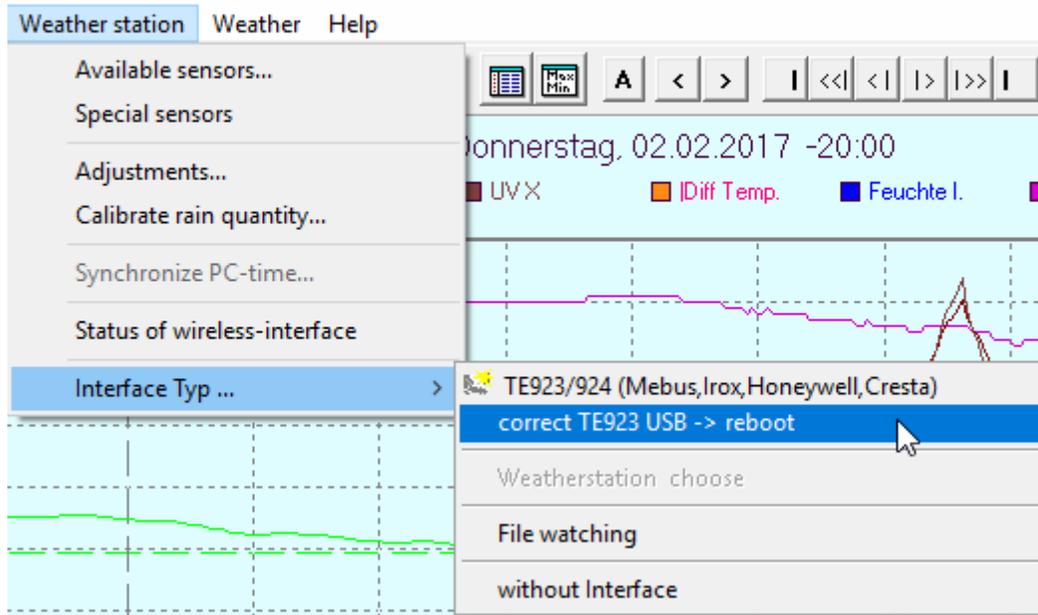
"AllowIdleIrplnD3"=dword:00000000

After changing this, Windows 8.1/10 needs to be restarted!

Of course, in order to be able to do this: **corresponding user-rights (Admin) are necessary.**

**As of V2.98.5, this modification can execute the program itself:**

nd Data Acquisition Software - V2.98.5



If this entry is not visible, no TE923 (with OEM's) is connected and/or the change is not necessary!

**Important!**

- Confirmation of the user account control (running as an administrator) is essential!
- If this utility (Wswin\_TE923usb.exe) have identified as a virus and/or harmful program, then you must "trust" or "exclude from verification" the program or do itself the change in the Windows Registry as described in the Program Help!
- After a successful change in the registry, a reboot of the computer is performed!

## NetAtmo (Internet Weather Station)

Currently required:

Via the NetAtmoXML.exe utility, a continuously updated CSV file, e.g. netatmo.csv is updated.

you can do this with the batch programs netatmostart10.cmd and netatmox.cmd.

Where netatmostart10.cmd starts the file netatmox.cmd every 10 minutes and with this

Batch file (enter your own parameters there) The data will be retrieved via NetAtmoXML from Netatmo and written to the file netatmo.csv.

Settings in the wswin\_x-csv\_import.cfg

Supported sensor ID's for it

- 1 Indoor temperature
- 2 Outside temperature
- 3-5 Temperature Additional sensors 1..3
- 13 Co2 indoor sensor
- 14..16 Co2 additional sensors 1..3
- 17 Inside humidity
- 18 Outside humidity
- 19..21 Humidity additional sensors 1..3
- 26 Volume
- 27 Battery wind sensor
- 28 Battery rain sensor
- 29 Battery outside sensor
- 30..32 Battery additional sensors 1..3
- 133 Air pressure
- 134 Rainfall 24h -> see text below!
- 35 Wind speed
- 36 Wind direction
- 45 Wind gusts -> see text below
- 96 ^ Unit = 1 Direction gusts (set unit to 1 here!) -> see text below
- 70 reported rainfall of Netatmo (only useful if rain 24h available!)
- 71 Indoor Last seen in seconds
- 72 Outside Last seen in seconds
- 73..75 Additional sensors 1..3 Last seen in seconds
- 76 Wind Last seen in seconds
- 77 Rain Last seen in seconds
- 81 Indoor RF signal
- 82 Outside RF signal
- 83..85 Additional sensors 1..3 RF signal
- 86 Wind RF signal
- 87 Rain RF signal

Under Weather Station, Interface Typ ..., Weather Station choose -> select Netatmo

After acceptance (close window) then Wswin is adapted to this station (sensor limits, default name, etc.)!

Under Weather Station, Settings select the CSV file generated by NetAtmoXML.exe.

Wswin then analyzes this file (header line) and then offers to create a wswin\_x-csv config file.

Under File, Import weather data go to tab X-CSV and select the previously created or self-created X-CSV file

For naming the generated X-CSV files (g=Gust, 4=24h rain available)

wswin\_x-csv\_netatmo\_io123.cfg Order in the CSV file: indoor, outside, M1, M2, M3

wswin\_x-csv\_netatmo\_io12r3wg4.cfg Order in CSV file: indoor, outside, M1, M2, Rain, M3, Wind + gusts, 24h Rain

Important!

If the header line contains an entry for "Wind GustAngle or Wind GustStrength" only gusts will be considered.

Exception: if the wind sensor is the last sensor in the CSV file, gusts are taken into account

-> since version 14.4.1.3 (2017-11-04) the NetAtmoXML.exe also returns the gust values, but if you have not started a new CSV file here, the "Gust entry" is missing in the header line.

If the wind sensor is not the last sensor, then you must necessarily share the existing file, if then gust data in the CSV file are available.

Rainfall: if there is no entry "Rain 24h" in the header line, Wswin can not consider this "better" rain value!

-> Since version 17.4.2 (2017-12-04) NetAtmoXML.exe also returns the 24h rain value

Then change in the tab Import File to "X-CSV" (if not selected) and with the button "Select File" the one created by NetAtmoXML

Select CSV file (netamo.csv).

With OK the data will be transferred.

Then save / accept this file as wswin\_x-csv\_import.cfg.

Enable file monitoring:

Weather station, interface ..., file monitoring

Here you can choose wswin\_x-csv\_import.cfg as import option.

If everything is ok, then Wswin will immediately display the path to the import file at filename.

Now the options

- convert data before and

- File monitoring active

Set time to 10 seconds

choose.

After "OK" then the "Recording" button becomes active and you can start the file monitoring

-> the netatmo.csv must of course be updated with the utility or batch file every 10 minutes.

### **Plausibility check:**

Since sporadically missing data occurs here, these data are subjected to a plausibility check (if activated) - should always be kept on !.

Special feature of the plausibility check Netnetmo:

If internal temperature and air pressure are faulty, all other values will also be faulty

set -> here not all data was received by Netatmo and the order of the data is

indefinite -> the last valid received record is used here

-> **always provided that the plausibility correction is activated!**

During file monitoring and change of month, the monthly file is renamed after the data has been transferred

-> filename\_yyyymmddhhmm.csv - this will start again with an "empty" monitoring file

- where filename is the name you set - mostly netatmo

- yyyymmddhhmm is the last read record of this file

Example: NETATMO\_20180301\_0920.CSV - the file was saved on 2018/03/01 at 09:20.

### Contents

# General Information

## Consider!

The representations in this description can deviate from the representation with you.  
The program always makes available only the functions, which also the weather station / interface offers.

### - Is partially valid only for ELV Wireless Interface

The wireless PC-interface represents a high-quality, extremely convenient general-purpose weather measuring system which can include the data of up to 16 external temperature and humidity-sensors, a wind sensor and a rain sensor.

The Operating- and Data Acquisition Software allows the convenient recording of these weather data in connection with the PC wireless - interface. The measured values can be stored in this case in optional intervals of 3 minutes up to 120 minutes (2 hours). For an evaluation it is merely necessary to transmit the data stored in the wireless-interface into the personal computer regularly. Dependent on the chosen interval, this can for example take place once every day or once every week.. By means of the continuous connection of the Weather Station to the personal computer a continuous representation of the registered weather data is possible additionally.

The Operating- and Data Acquisition Software also allows the defining of threshold values. If the value falls below or exceeds the threshold value, for example a hint or a program can be started.

For the analysis of the weather data the desired period (day, week, month, year) can be selected. Only the measurement variables chosen before will be issued.

Weather data can be depicted in the form of a diagram or a table. In addition, for the chosen period the minimum and maximum values can be issued.

The measured values can be shown optionally in a separate window which is similar to the display of the Weather Station.

### Technical Data

[WS2000-PC/WS2000](#)

[WS2500-PC/WS2500](#)

[Weather Sensor Receiver](#)

[WMR-918](#)

[WM-918](#)

[VantagePro](#)

[TE923/TE923W](#)

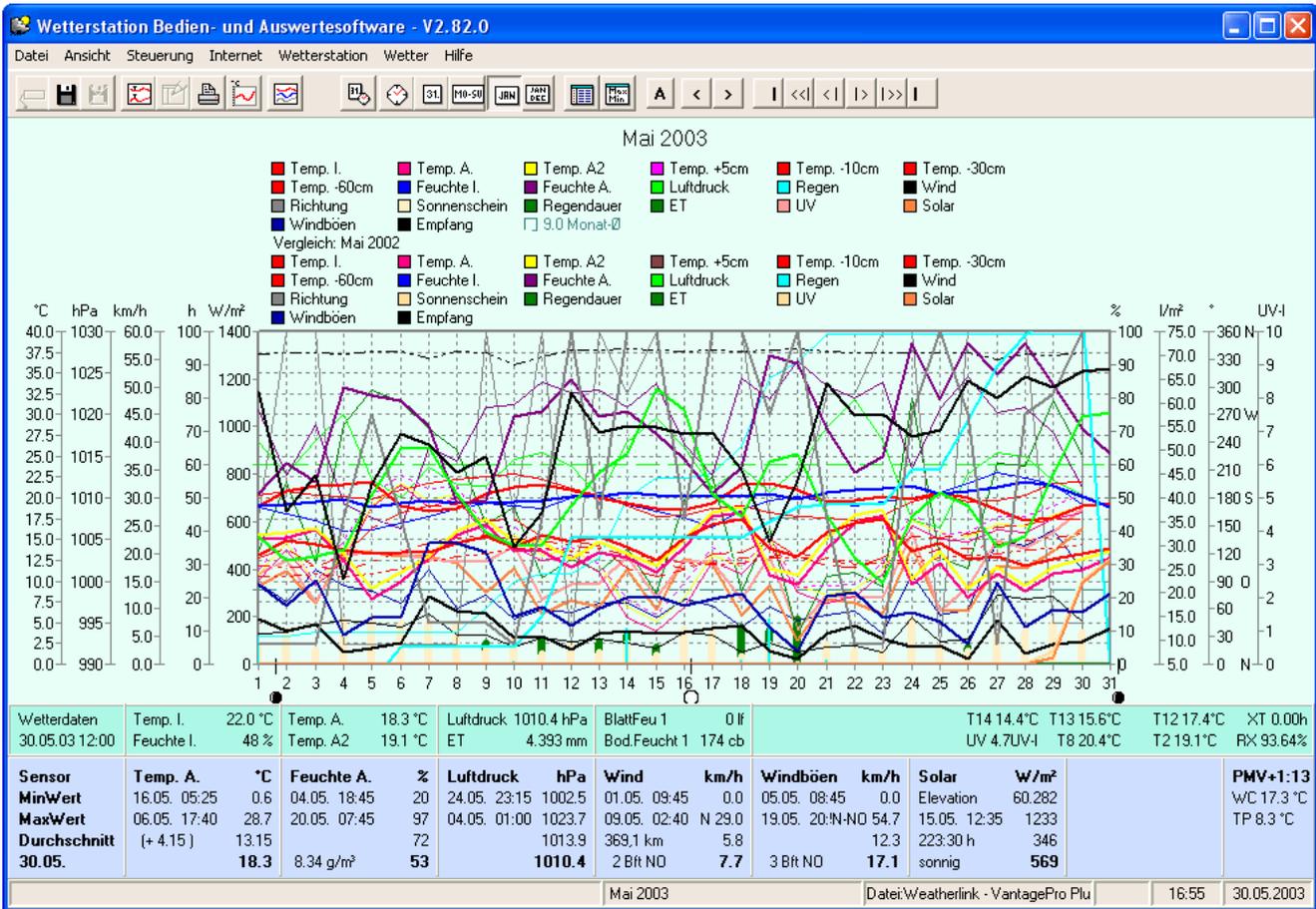
### Backup data

### Update WsWin

### Suggested Measurement Heights

### Special Terms

### Meteorological Basics



View of my system with comparison values

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# System Requirements

The Operating- and Data Acquisition Software can be used basically with every personal computer with Windows 95/98 or

Windows NT/2000/XP. However, for maximum working speed a Pentium with a clock frequency of at least 800 MHz is recommended.

However, the program also works with a minimal equipment of 486SX-Processor, 33 MHz and 4 MB memory and operating system Win95 !!!

For Windows 3.11 a special version exists with which only part of the functions of the 32-bit version can be used - is not being updated anymore.

When using Windows 95/98, at least a 32 MByte RAM should be installed in order to allow fast working in this case too. With Windows NT/2000/XP at least 256 Mbyte main memory should be installed in the PC due to the more extensive operating system.

**From version V2.90.0, the operating systems Win95, Win98, WinME are no more supported!**

With Windows-NT (2000/XP/Vista/Win7/Win8 ...) certain rights are necessary for changing the time !

## **32-bit program:**

- administrator- and/or. main user rights are necessary for the setting of the PC clock with DCF
- complete buffer memory (1024 data records) can be logged
- multiple starts of the application are possible; active work is possible with up to twelf Wireless interfaces (because of 12 COM interfaces)
- File - Watching doesn't work under Windows 95 (not tested!)

## **VISTA and Windows7/8/8.1/10 64-Bit or 32bit**

Under Vista/Window7/8/8.1/10, the program should be installed under **C:\Wswin** (as it proposes also the installation-program) and not under C:\Program Files (x86)\Wswin or correct %ProgramFiles%\Wswin.

**If the help function (.hlp file) was deactivated by Windows, you can now reactivate it from Wswin:**

- you find this in Menu under Help and here via info.txt the menu point "correct help"
- you must have the batch file C:\Wswin\WinHelp32\winhlp.cmd (normally installed with V2.98.5/6)
- Administrator rights are required (if requested)
- If the correction was successful or not necessary, this menu item disappears or is not available.

Who would like to use the full functionality of the weather condition announcements, that is wants to store also the data in a MS-Access database, must ADO (Data ActiveX objects) have installed and/or. the relevant JET-Engine 4.0. For the operation systems Windows ME and Windows 2000/XP ADO appertains to the system. Who has installed MS-Access, at those ones, this Engine should be also available.

**Caution!** Under Windows7/Windows8/Windows10 as well as Vista admits the program no more that it is started under %ProgramFiles%\%Installationpath%  
For example C:\Program Files\Wswin or C:\Progra Files (x86)\Wswin !

## **Caution! A printer must be installed**

(without printer the program does not work)

For representing the graphics at least a screen resolution of 800x600 is necessary !

If only a smaller display is available, not all functions can be used in the full extent (for example display of additional measured values in the display bar, show all comparison data).

For printing any printer installed with windows is suitable. By using an ink jet printer or a laser printer you will receive professional print-outs comfortably.

In order to guarantee a fast access at any time, a harddisk cache - program, for example SmartDrv, should be loaded with Windows 3.1. With Windows 95/NT such a cache-program is already integrated as a default.

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# Commissioning

Addressing Sensors

Commissioning the Software

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# Addressing Sensors

- Is valid only for ELV PC wireless interface

## Address assignment for representation in Weather Station and/or PC wireless interface

### Sensors S2000 I, S2000 IA, A S2000, ASH3

<b>Address</b>	<b>Weather Station</b>	<b>PC interface</b>
0	Sensor 1	Temperature 1, humidity 1 (outside)
1	Sensor 2	Temperature 2, humidity 2
2	Sensor 3	Temperature 3, humidity 3
3	Sensor 4	Temperature 4, humidity 4
4	Sensor 5	Temperature 5, humidity 5
5	Sensor 6	Temperature 6, humidity 6
6	Sensor 7	Temperature 7, humidity 7
7	Sensor 8	Temperature 8, humidity 8

### Sensor S2000 ID

<b>Address</b>	<b>Weather Station</b>	<b>PC interface</b>
0	Sensor top left	Temperature 9, humidity 9
1	Sensor top left	Temperature 10, humidity 10, air pressure 10
2	Sensor top left	Temperature 11, humidity 11, air pressure 11
3	Sensor top left	Temperature 12, humidity 12, air pressure 12
4	Sensor top left	Temperature 13, humidity 13, air pressure 13
5	Sensor top left	Temperature 14, humidity 14, air pressure 14
6	Sensor top left	Temperature 15, humidity 15, air pressure 15
7	preset	Temperature inside, humidity inside, air pressure

With multi-functional operation (several Weather Stations in operation ) the **Weather Station** can be reconfigured correspondingly for the point of measurement **top left in the display** in connection with the sensor S2000 ID. A sensor S2000 ID must be employed for the measured values 9 to 15 for the **PC interface** !

### Commissioning

# Commissioning the Software

- Is valid only for ELV PC wireless interface

**Caution ! During the 1st start of the program the software is calm on "Operating without interface". They must choose therefore an interface !**

After starting the Operating- and Data Acquisitions Software, a test is carried out, first of all, whether the PC wireless interface is connected at the serial interface. The connection to the 2nd serial interface (COM 2) is standard designated. The status bar informs about whether the wireless interface was found. Choose, if required, another serial interface in the menu "Wireless interface" and there Com-port

As a default the PC Wireless Interface supports up to 9 sensors, that are recognized automatically if the addresses are set correctly. The number of sensors simultaneously determines how many measured values can be stored in the wireless interface. The memory should be read out at the latest if it is full so that no data are lost. With the use of up to 16 sensors the memory requirement increases correspondingly so that less values can be stored at the same time. The necessary memory for the measured values is influenced also by the chosen Interval. The interval is the chronological distance in which the weather data are recorded, in the range from 3 minutes to 120 minutes (2 hours). As a default the recording occurs in a range of 5 minutes.

The following table clarifies the connection between the number of the supplementary sensors, the chosen range and the maximum measurement duration without measured values disappearing. 57 and/or 30 bytes are needed for every data record. The wireless interface has a memory of 32 KByte.

Sensors	Range (Minutes)	Maximum Measured Time (Days)
9	5	3 days 13 h 20 min
9	10	7 days 02 h 40 min
16	15	5 days 08 h 00 min
16	30	10 days 16 h 00 min
WS2500	15	10 days 16 h 00 min
WS2500-PC	2	1 day 10 h 08 min
WS2500-PC	60	42 days 16 h 00 min

The number of supplementary sensors and the interval can be changed with the function "Adjustments" in the menu "wireless interface".

## Hint:

The wireless interface is reinitialized by modifying these settings. All weather data stored up to now are lost! In addition, the wireless interface can not send any data for a short time since the Weather Station determines all available sensors automatically during this time.

## This software supports both the old WS2000-interface as also the newer WS2000-interfaces (V2.x)

If the interface version is not recognized automatically, you can default the interface version in the file "WSWIN.CFG" in the section

[Options]

Interface Version=10

Attitude for old interface and/or.

Interface Version=24 (>10 - new interfaces V2.x)

## Difference old / new WS2000-interface:

### WS2000 old interface:

- the reception of the sensors has priority before the data exchange with the V24 interface
- when changing a parameter (Interval, sensor number) a communication was not possible with the interface for approx. 6 min
- alarm-values are managed in the interface
- 682 data records are possible when operating with 16 sensors

### WS2000 new interface:

- the data exchange via the V24-interface has priority before the sensor reception
- in case of parameter-changes the communication is possible again after a short time
- no alarm values possible in the interface any more
- only 512 data records possible when operating with 16 sensors

- for every sensor there is a "new flag" which indicates whether this value was recently obtained

**Interfaces V3.x = WS2500-PC as well as WS2500:**

(Modification / expansion to new interface V2.x)

- none 16 Sensors operation
- support for Sensors V1.1 as well as V1.2
- supports Brightness Sensor
- the WS2500 has a fix storage interval of 15 minutes

In order for a fast selection of the measurement variables to be possible in the Operating- and Data Acquisition Software with the function "**Available Sensors**", in the menu "Wireless interface", all measurement values for which no sensors are available can be switched off. In the lists for the selection of a measurement value only the here activated measurement values are offered then.

**For the display of the correct air pressure** it is necessary to indicate the altitude of your location in the Weather Station and in the software in meter (or feet) above sea level. You can do this in the software in the menu "wireless interface" , function Location and enter here the corresponding value.

The **rainfall measurement system** has already a very high accuracy so that an adjustment normally is not necessary. In the case of very high accuracy demands in the professional use an adjustment can be necessary - see Calibrate rain quantity.

Commissioning

# Functions

The menu of the Operation- and Data Acquisition Software has the following Functions:

## File

Properties

Choose Comparison

Smooth graphics

Weatherdata read out

Start recording

Stop recording

Edit weatherdata

Exporting...

Export month file

Monthe Rain quantity export

Export all month files ...

Selected Sensors ...

Default Sensors ...

Data files ...

Export current data

Export weatherdata

autom. create export-file

autom. export datarecord

Import weatherdata

SkyView Access-Data import

Converting weatherdata

Choose printer

Print graphics

Options

Choose language ...

Deutsch

English

Francais

Italiano

Cesky

Nederlands

Spain

Initiate Sensor texts again

## View

Adjustments

Choose period

Time

Day

Normal display

24h display

Week

Month

Year

Choose measured Items

Sensors display bar

Sensors min-/max bar

Rain displaying ...

as Process

as Column

Individual display of sensors

Show all sensors

Show Internet sensors

Show selected sensors

Table

Minimum and maximum ...

Display

Mini-Display

Single / Mini Graphics

Instruments

Update

Quick start bar

Displaybar

Min-/Max bar

Statebar

## **Control**

Alarm values

Adjustments

Properties for Template/APRS/Synop/Metar

Near Real Time (NRT) – Flash

Create APRS file

Create Template file(s)

Test

Time

Day

Week

Month

Month NOAA

Year

Year NOAA

Secure

Internationalize user files

Reset all Units to ...

(°C,hPa,km/h,mm,m) metrical

(°F,inHg,mph,in,ft) US

Select standard config file

Select alternative config file

Save alternative config file

Execute Ftp data transfer

Send Email Report

Create File report

## Internet

### Adjustments

#### General

current.html

Start page

#### HTML

Basic files ...

Create Html startpage

Create start.txt

Update head-/info.html ...

#### Sensor

#### Graphic

Wunderground.com

Wetterarchiv.de

AWEKAS

WWW

Create updated data file ...

Create weather symbolic file ...

Customised Html file(s) ...

Create Html table

Create Html graphics

Save Distribution Wind direction

Save Mini-Display

#2 Create mini graphics

Save diagram graphics

Save graphics (as displayed)

Update graphics/tables ...

Update Internet files ...

## Data Internet

View data -> Wunderground

Cursor data -> Wunderground

Hour data -> Wunderground

Data -> wetterarchiv.de

APRS View data

Weather data Link

## Weather station

Available Sensors

Special Sensors

### Adjustments

Adjustments VantagePro

Adjustments TE923

Adjustments NetAtmo

Calibrate rain quantity

Synchronize PC-time

Status of wireless Interface

Status Weather-Sensor

Status of Weatherstation (WMR918/968)

Status VantagePro

[Status TE923](#)  
[Status NetAtmo](#)

[Com-Port](#)  
[InterfaceTyp](#)  
WS2000-PC V1.0  
WS2000-PC V2.x  
WS2500(-PC)  
Weather-Sensor

WM-918  
WMR-918/968

VantagePro

TE923

Netatmo

[File watching](#)  
without interface

## **Weather**

[Weather condition](#)  
[Weather forecast](#)  
[Winddirection](#)  
[Statistic dates](#)  
[Degree days](#)

[Sun/Moon](#)

[Weather Calculator](#)

[Location](#)

[Contents](#)

# Properties

For the representation of the measurement values in the diagram different properties (Scaling, color and so on) can be adapted with this function to the own needs.

In addition, it is possible to modify the denotation of the measurement values. For example, the location of the respective sensor could be employed.

## Hint:

For modifying the properties only those measurement values are available that were activated with the function Available Sensors from menu "Wireless Interface".

## Measured value

This field allows the selection of the measurement values, for which the qualities are supposed to be modified.

## Description

Here you can change the description of the measurement value, for example temperature in the shadow. This description is used during the selection of the measurement values in the respective lists.

## Short name

This input field allows the input of an abstract, which is used during the graphic representation within the legend. The length of the short name is limited to 10 chars.

**Consider!** With the diagram representation, the short name is supplemented as well as is put in front with

- \* if smoothing is chosen for this sensor
- | if it is a combined sensor with median value formation
- + if it is a combined sensor with maximum selection
- if it is a combined sensor with minimal selection

## Unit

This field determines for the respective measurement value in which unit the measured values are represented, for example °C or °F. **In case of change of the unit, the corresponding maximum- /minimum values are converted too.**

## Sensor calibration

This field determines for the respective measurement value, around how much the "read in" measured value is supposed to be corrected. For the wind direction there is only **correction value**, otherwise **adjustment values** and **factor**.

Permissible fields:      Temperature +/- 3,0  
                                 Humidity & air pressure +/- 20,0  
                                 **Wind speed +/- 5,00**  
                                 Wind direction 0-360°

The default correction factor for all values is **1.0** -> no changes.

All factors have a range from **+0.001 – +3.900** (until V2.93.19: +0.300 – +1.900)

For the other measurement values (Rain/Wind direction) no correction is planned.

**Consider!** This program always **calculates internal in metrical** – so all correction are first done to metrical values and only at showing converted to the other units.

With the in a **red way bordered check box** (behind the settings) you can annul the intern limit values for a unique input. Necessary for example for own „sensor constructions“.

**Attention!** If you have input values outside of the intern limit values, you must absolutely energize this option before modification, otherwise the program resets to the internal limit values!

If you set the limit **values** here out of effect, you must carry, that the program works correct with that.

## Plausibility-correction

With this option, you can disable the Plausibility - correction for individual sensors.

Important, for example, for checking temperatures in solar plants, where in case of switching on the pumps the corresponding temperature jumps in the sent values were rejected through this correction as Invalid.

## Available from

Here, you can boast the day of the installation of the corresponding sensor.

The sensor as well as the data before this time lie are in most representations then faded out as well as not represented.

At time beginning within a representation time period, this sensor is represented for the entire time period. (Html - tables – representation).

## Example:

Installation at the **2002/06/24** -> the sensor is presented in the **year 2002** and in the month **June 2002**, however not in the **year 2001** or in the month **May 2002**

## Maximum

With this input field the maximum value is defined for the scaling of the axis of ordinates for the respective measurement value, for example 1100 hPa for the air pressure.

With the humidity sensors, you have the possibility to restrict the low humidity value additionally.

The correcting range span 0-20 percent. this setting is applicable to all humidity sensors for the WS2x00-Stations with the weather date reads and with the Importing/Converting for all systems, if chosen.

If the minimum value of the corresponding measurement value is entered here (only possibly when choosing "autom. scale adaptation"), the maximum value is computed automatically.

## Minimum

This input field defines the minimum value during the scaling of the

Y-axis ordinates for the respective measurement value, for example 980 hPa for the air pressure.

If the maximum value of the corresponding measurement value is entered here (only possibly when choosing "autom. scale adaptation"), the minimum value is computed automatically.

With the humidity sensors, you have the possibility to restrict additionally the low humidity value.

Range span 0-20 percent. This attitude is applicable to all humidity sensors for the WS2x00 - stations during the weather date reads and when importing / being converted for all systems, (if chosen).

## Incrementation

With this input field the increment can be determined for the respective measurement value for the axis of ordinates scaling, for example 10 hPa for the air pressure.

## Autom. scaling

If this option is chosen [default for the Temperature-, Wind speed - and Rain-Sensor], the defaulted scale is extended like this, at larger/smaller according to values.

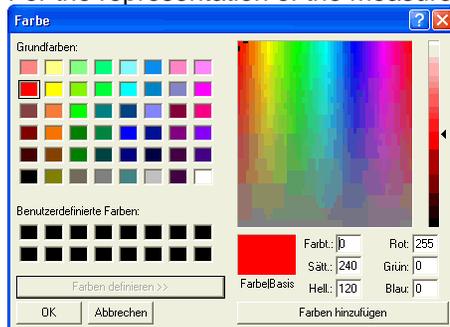
## Hint:

In case of the scaling for the sensor models of temperature/humidity/air pressure only a scaling is represented. The settings of the first sensor to be represented are used respectively- for example if no representation is chosen for inside sensor, so the settings of the 1st sensor are used (provided that that one was chosen also to the representation, normally just the next sensor to be represented).

The autom. scale adaptation is not applied for the comparison display.

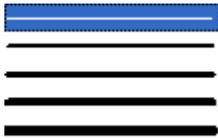
## Colour

For the representation of the measurement value in the diagram, this field allows the modifying of the line colour.



## Width

Here you can select the line width. With this selection the line will be drawn.



### Smooth line

Only for the Barometer there can be the smoothing of the diagram line selected (only valid in **day** view)

**Consider!** Another line type, as passed through, requires system-induced the standard narrowly width as line width. If another width was chosen, this **setting (type) is ignored**.

Possible settings:



### Comparison

With this command button the kind of the representation for the corresponding arrangement process can be determined (Colour, width, kind).

The screenshot shows a 'Parameters' dialog box with the following fields and controls:

- Parameters:**
  - Meas. item: Humidity Outdoor (dropdown)
  - description: Humidity Outdoor (text)
  - short name: Hum. O. (text)
  - Unit: % (dropdown)
  - Plausibility-correction:
  - Sensor calibration: 1.000 +/- 0 (text, with a red box around the +/- 0)
  - Available from: 1980 (Year), 1 (Month), 1 (Day) (spinners)
  - ID18 (text)
- Scaling:**
  - Maximum: 100 (text)
  - Minimum: 0 (text), 0 (spinners)
  - Incrementation: 10 (text)
  - autom. scaling:
- Lines:**
  - colour: purple (color picker)
  - Width: (dropdown)
  - kind: (dropdown)
  - Smooth line:
  - Comparison: (button)

[Functions](#)

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# Comparison

For the judgement of the weather data it is frequently helpful to compare these already available data. Simply choose the desired period (Day, week, month, year) for the selection of a process. By activating the command button "Remove", the display of the comparison data can be disabled.

Only those measurement values are considered at the selection, that were switched on in menu "View", function Choose measured values.

If the chosen program representation (window) is too small in order to show an arrangement, then this is pointed out with a corresponding announcement

## Day

This input field allows the selection of the day of which the comparison data are supposed to be displayed in the display "day".

## Week

With this field the calendar week for the selection of comparison data in the display "week" can be chosen.

## Month

This list allows the choice of month for the comparison process in the displays "Month" and "Day".

## Year

With this field the year for the choice of comparison data can be chosen for the displays "Year", "Month" and "Day".

## Remove

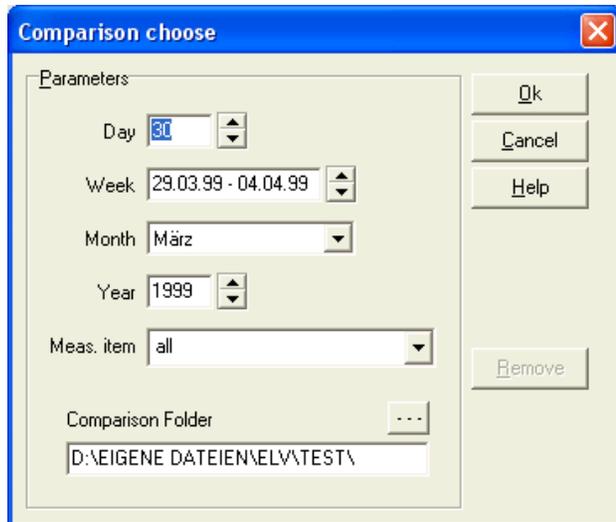
By activating this command button, it is possible to stop editing the comparison process again. The dialogue window is shut then immediately and the graphics representation updated.

## Ok

With this command button the selection of the comparison process for the before chosen day or period is confirmed.

## Comparison Folder

If you would like to compare the dates of two weather stations, you can here select the data folder of the second weather station. Defaulted will be the own data folder.



Functions

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# Smooth graphics

By transmission parity errors in the wireless system or other influences the recorded weather data can contain measured values differing from the normal values strongly. This is obvious particularly during the representation of a single day.

The process should be smoothed in these cases before a print-out by using this function. The smoothing occurs through an averaging where the number of supporting-values can be chosen freely.

The original measured values are not modified during the smoothing. The smoothed process is not stored and disappears at any change of the period again. Therefore the graphics should be printed out before choosing another period.

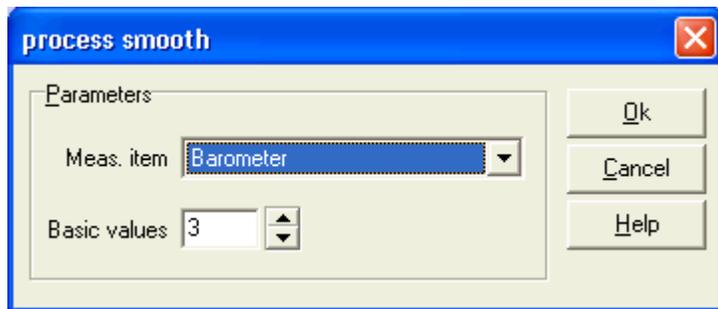
In order to correct the wrong measured values permanently, the function [Edit Weatherdata](#) must be called.

## Measured item

This list allows the selection of the measurement value, whose process is supposed to be smoothed. The list contains only measurement values which were turned on with the function [Choose measured items](#) in the menu "View".

## Basic values

With this field you can determine how many neighbour measured values are included in the averaging. The two previous and the two following measured values are considered at 5 supporting-values next to the current measured value for example.

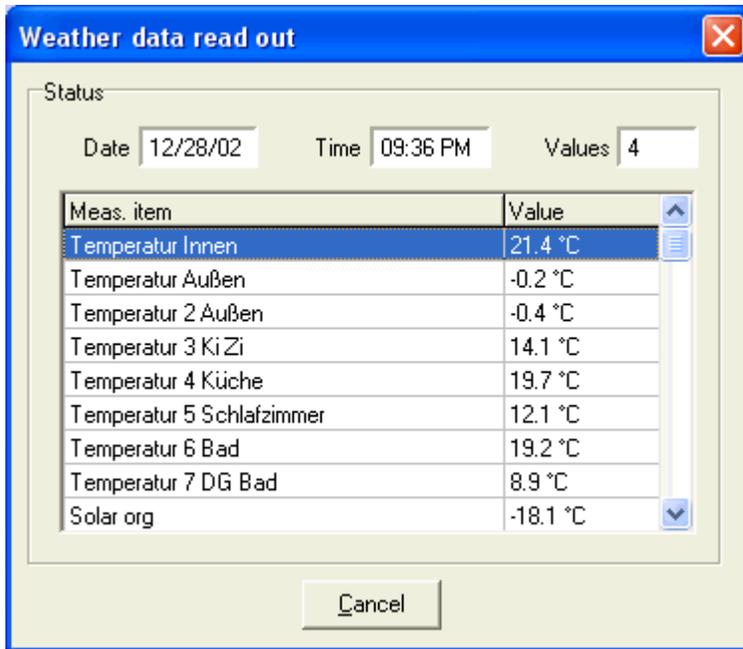


[Funktion](#)  
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# Weather data read out

- Is valid only for ELV PC wireless interface

With this function you can read out the weather data stored in the wireless interface and transmit them thus into the personal computer. After the read-out, all of the new data can be analysed immediately on the screen.



[Functions](#)

[Contents](#)

# Start recording

With this function the simultaneous recording and representation of the measured values on the screen can be started.

## Hint:

During recording the changeover of the view is possible only if the read-out of the complete weather data from the interface is completed.

With the Weather Station WMR-918 the recording is started possibly with around 1 minute delay - this condition is dependent on the existence/data reception of the indoor - and/or. outdoor sensors.

## Weather Station WMR-918

If you do not want to loose any data from the Weather Station, you should enable the corresponding option under Options

If you chose "File-Watching", also this "watching" is started with this.

Be not surprised, if the year-, month or week data suddenly are read after the starting of the "recording". This is necessary to get about the current rain quantity values for the Current.html as well as the customised Html-files, (only happens, if these time periods deviate from the current!).

-> is only executed, if the corresponding internet activities are activated!.

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Contents

# Stop recording

With this function the simultaneous recording and representation of the weather data on the screen can be stopped again. The weather data are then saved again in the [Wireless Interface](#) .

If there is no recording by the Weather Station WMR-918, the data are lost forever!

If you records weather data with the function "File-Watching" and the watching program falls from, you should necessarily stop also the recording and after the smooth business of the "master program" = watching program starts the recording again.

[Functions](#)

[Contents](#)

# Edit weather data

During the recording of the weather data it is possible that not always all measured values are available because of transmission parity errors or other influences. An unfavourable location or sensors not working correctly can be the cause of that for example..

Thus the edit function allows the modifying of the individual measured values for every measurement item. The processing is possible only within the display "Time" or "Day". The measured values are saved during the processing after every input automatically. After closing the window the graphics are updated automatically.

## Measured item

With this list you can choose the measurement item whose measured values are supposed to be edited. This list contains only measurement units which were chosen before with the function Available Sensors in menu "Wireless Interface" .

## Find

This function allows the fast and specified correction of a measured value through the input of date and time. Then the list is moved automatically to the corresponding entry.

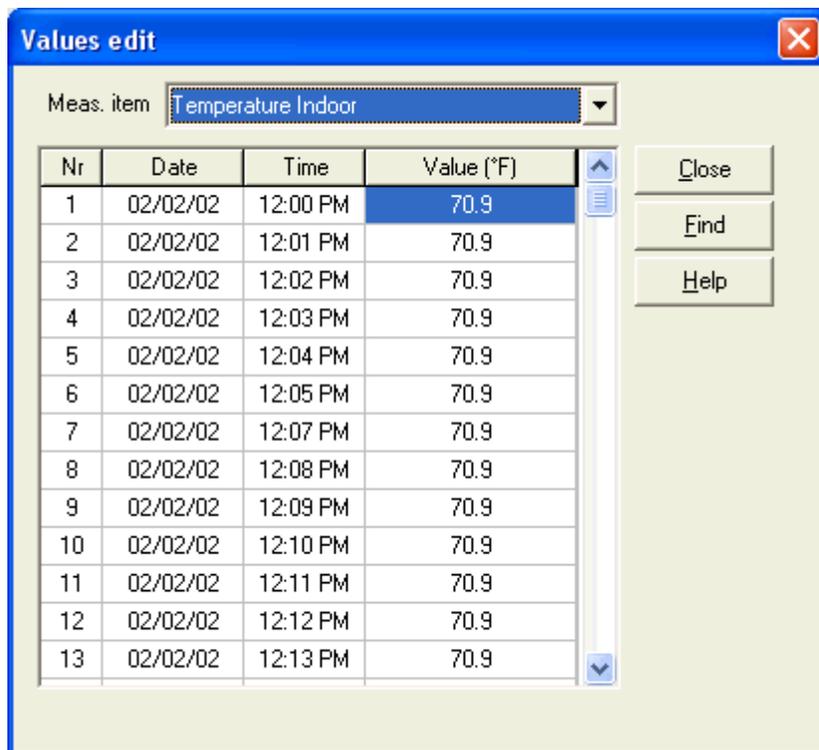
"artificial sensors" = modified temp sensor or time sensors doesn't have edited itself, please choose for such values the "originated sensor"!

Consider please:

Weather data let be edited only in the contemplation time period "DAY".

If you have problems with the takeover of the altered data, so you switch on a trial basis to "normal" - day View (not 24h View).

If you should not have any success also with it, you had to generate a monthly file, there had to alter and had to import this altered monthly file again.



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01.07.99;00:26;19,5;13,6;13,0;17,8;21,0;18,0;19,8;19,4;14,1;63;97;99;68;62;77;72;69;89;924;224;1,8;15  
 01.07.99;00:31;19,5;13,7;13,2;17,8;21,0;18,0;19,9;19,4;14,1;63;97;98;68;62;77;71;69;89;924;224;0,0;15  
 01.07.99;00:36;19,5;13,8;13,3;17,8;21,0;18,0;19,9;19,4;14,1;63;97;98;68;62;77;71;69;89;924;224;0,0;15  
 01.07.99;00:41;19,5;14,0;13,5;17,8;21,0;17,9;19,9;19,4;14,1;63;97;98;68;62;77;71;69;89;924;224;0,0;15  
 01.07.99;00:45;19,5;14,1;13,6;17,8;21,0;17,9;19,8;19,4;14,1;63;97;99;68;62;77;72;69;89;924;224;0,0;15  
 01.07.99;00:50;19,5;14,1;13,6;17,8;21,0;17,9;19,8;19,3;14,1;63;97;99;68;62;77;72;69;89;924;224;0,0;15  
 01.07.99;00:56;19,4;14,3;13,6;17,8;21,0;17,9;19,8;19,3;14,1;63;97;99;68;62;77;72;69;89;924;224;0,0;90  
 01.07.99;01:01;19,4;14,3;13,7;15,8;21,0;17,9;19,8;19,3;14,1;63;97;99;68;62;77;72;69;89;924;224;0,0;135

**Weather data export**

Parameters

Meas. items: Helligkeit

Format: Separator delimited text

Filename: EXP05\_03\_id38.CSV

Separator: ;  month file

Ok  
Cancel  
Help

**Weather data export**

Parameters

Meas. items: Date: 1 File

Format: Separator delimited text

Filename: AllData\EXP\_20000101.CSV

Separator: ;

**Separator month file**

.0.1.  :0.1:  :0.1:

Year: 2000 Month: 1

from: 2000 to: 2013

Month: 1 to: 3

Ok  
Cancel  
Help

**Weather data export**

Parameters

Meas. items: all

Format: Separator delimited text

Filename: c:\program files\wswin\exp09\_03.csv

Separator: ;

**Separator month file**

.0.1.  :0.1:  :0.1:

Ok  
Cancel  
Help

**Weather data export**

Parameters

Meas. items: Export all month files: 1 File

Format: Separator delimited text

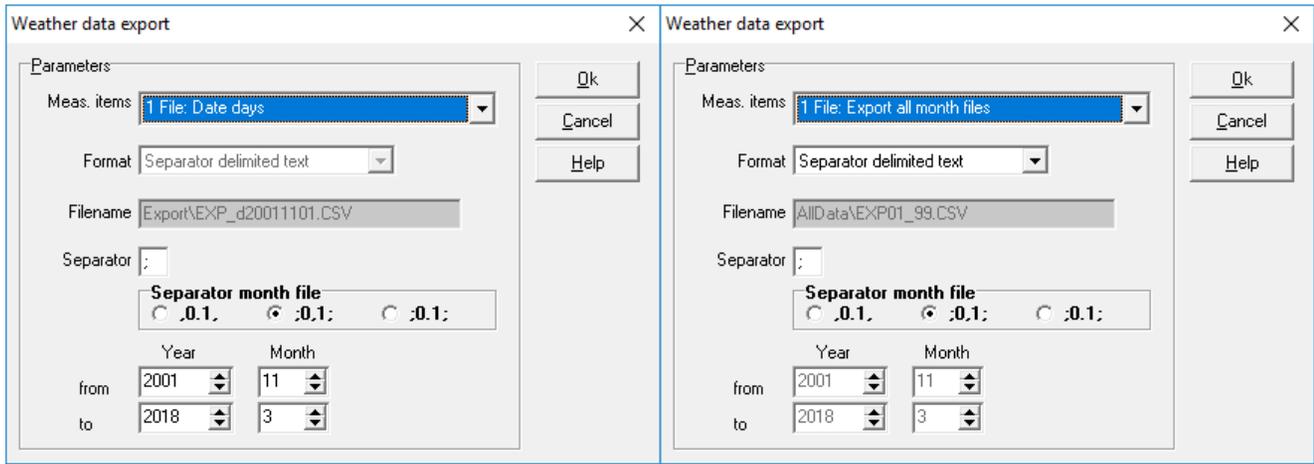
Filename: AllData\EXP01\_99.CSV

Separator: ;

**Separator month file**

.0.1.  :0.1:  :0.1:

Ok  
Cancel  
Help



EXP\_d20011101.CSV - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Arial 10

	A	B	C	D	E	F	G	H	I	J	K
1	Date	1:Temp. I.	1:Temp. I	1:Temp. I	1:Temp. I	1:Temp. I	2:Temp. O.	2:Temp. O.	2:Temp. O. min.	2:Temp. O. Max-Time	2:Temp. O
2		°F		°F		°F	°F		°F		°F
3	01.11.2001	67,5	05:50	64,8	20:55	70,3	38,8	20:20	37,2	12:40	
4	02.11.2001	69,7	05:25	64,9	22:25	73,8	37,9	06:15	31,3	13:30	
5	03.11.2001	70	07:05	67,3	00:00	73	41,6	23:45	36,7	12:45	
6	04.11.2001	70,6	23:45	66,6	11:50	74,1	41,9	00:35	36,1	13:05	
7	05.11.2001	62,9	23:15	60,1	00:00	66,6	37	21:55	31,5	13:15	
8	06.11.2001	58,8	22:50	57,7	00:00	60,1	35,7	01:10	30,2	12:00	
9	07.11.2001	58,1	05:35	57	10:35	60,1	38,8	02:45	36,5	17:10	
10	08.11.2001	62,2	05:40	56,7	20:50	69,8	41,1	23:50	34,2	17:15	
11	09.11.2001	68,2	07:05	62,2	14:35	72,7	29,3	20:20	25,9	00:00	
12	10.11.2001	69,9	07:30	63,7	14:55	74,8	26,9	23:20	22,6	13:45	
13	11.11.2001	68,6	07:25	63	13:35	74,5	29,3	03:30	22,5	13:35	
14	12.11.2001	61,4	22:25	58,8	00:00	64,6	27,8	07:55	25,2	14:45	
15	13.11.2001	58,2	05:40	57,4	06:30	59,2	28,9	00:15	26,6	14:15	
16	14.11.2001	59,3	05:40	56,7	11:05	64,2	27,4	07:55	23,2	11:25	
17	15.11.2001	59,6	05:20	57	13:00	63,3	28,1	07:15	21	14:30	
18	16.11.2001	64,1	03:50	57,4	22:50	71,2	28,7	02:50	24,4	13:25	
19	17.11.2001	68,7	07:20	63	13:30	72,7	31,9	06:55	25,5	14:10	
20	18.11.2001	67,4	23:55	62,4	13:20	71,1	24,8	23:40	23,2	00:00	
21	19.11.2001	59	23:40	57,6	00:00	62,4	25,1	06:10	20,1	11:40	
22	20.11.2001	57,5	03:25	56,5	06:35	58,5	28,5	05:45	26,1	12:30	
23	21.11.2001	57,4	05:50	55,2	19:05	58,6	29,9	02:00	28,4	20:15	
24	22.11.2001	57,2	05:00	55,2	09:40	58,3	29,5	08:20	26,4	16:20	
25	23.11.2001	63	05:00	55,6	22:55	69,1	25,9	18:30	22,1	00:00	
26	24.11.2001	67	07:20	60,8	20:10	71,1	27,6	00:00	25	20:20	
27	25.11.2001	67	23:50	62,4	13:40	71,2	29,1	07:20	27,7	11:50	

Sheet 1 of 1 | Default | German (Germany) | Average: ; Sum: 0 | 100%

## Export month file

With this function you can directly store the currently chosen month as an export file (for example for later import). The data are stored in the **internal mode** of processing !

**Consider!** At the weather stations WMR-918 and Weatherlink/VantagePro, the generated file contains also the weather forecast and with Weatherlink additionally the Gust Winddirection (= GWD).

One can export the monthly-data file also daily as well as.at program-start automatically.  
Settings is under File, Options, TAB "Parameters"

## Month Rain quantity export

Hereby, one can the "pure" rain values, therefore the time, at which the rain quantity >0 mm was, export into a particular export file in the **internal processing form** and solid naming.

File format "rainyyyymm.csv" (yyyy = year, mm = month)

Intended for possible later bringing together / entitling of existing rain data.

## Export all month files ...

For all available month weather date files a CSV export file is created. The search area is the same one, that one under "Internet", "**Start page**" - "**Period for start page of - until**" defaults. These files are stored in a subdirectory of the program-folder "Export".

When for the being exported month already a Month Export File exist, this month is skipped over - **Exception current month**, this month is **always overwritten**.

→ who would like to **export such months again**, the corresponding month export file must deleted before!

**The export format of these files is defaulted:**

**"Comma , "** as separator between the values - for example:Outdoor Temp; Outdoor Humidity; ...

**„Point . „** as decimal point – for example: 14.5,90,1023.5, ...

**These dates are not characterized / designated for the import for this program.**

### Selected sensors - file model EXPyyyyymmA.csv

In this export -file become values for the sensors that were selected among "available sensors"

### Default sensors – file model EXPyyyyymm.csv

In this export -file are entered only values for the sensors for outdoor temperature, outdoor humidity, air pressure, rain amount, wind rate, wind direction (and gusts of wind provided that those ones are supplied from the weather station).

### Data files ... or "Export all month files: 1 File"

**Only the sensors are exported, which are chosen as "available"!**

With this, all available data, exact: the year range set under Internet, Adjustments, and here in TAB „Start page“ and the option „**Period for start page form xxxx to yyyy**“, are saved as CSV-export file into the special subfolder of WsWin . "AllData".

Is at available brightness-sensor (lux = WS2500) - sun-correction-adjustment chosen and the calculation of the solar-radiation W / m<sup>2</sup>: activated, the solar-radiation-value is also the monthly-export-data file presented! (Switch form **WS2500 - > VantagePro**)**These data files can you import again all at once – see „Import weather data“.**

With "Export all month files: 1 File" only one data file is generated, for example for simple altering the indexes.

Heed: normally, you can process this data file only with Excel2007 (and higher) or a corresponding text editor!

You can import this data file(s) again all at once under Importing weather data.

**If you would like to change your main outdoor sensor to an other ID, you save up much time expenditure with this possibility!**

With the above-mentioned function do exporting all data, change the corresponding ID (usually 2 and 18) in the header line to the new numbering and import everything after that in a "one way" again.

After that, updates the Year Files!

## Export current data

With that the data of the represented period (Day, week, month, year) and of all available sensors' are exported. The data correspond in this case to the represented values - and are not suitable for the import. The file name is derived

from the representation period (for example Y2000.txt).

For the format "**Text with separators**" is used. The prepared separator must be entered at "Export weather data".

## autom. create export file

An export file is created by choosing of this option after the read-out (only PC Wireless Interface) and after every saving of new weather data with the available sensors and for the chosen period (Current day or 24 hours). This file receives the name "**aktuell.txt**".

"**Text with separators**" is used as a format. The prepared separator must be entered at "Export weather data".

## autom. export datarecord

with election of this option, after each new saved record, whose data (selected available sensors) becomes in a file "**ws\_newdata.csv**" stored, if there already exist the file, only the record is joined, otherwise the "document headers" become additionally = inserted sensor description and sensor unit.

Intended for example for SQL - import.

Example:

```
Date,Time,Temp. I.,Temp. A.,Temp. 2,Temp. +10cm,Temp. -10cm,Temp -30cm,Temp -60cm,Feuchte I.,Feuchte A.,Feuchte 2,BlattFeu  
1,Bod.Feucht 1,Luftdruck,Regen,Wind,Richtung,Sonnenschein,ET,UV,Solar,Taupunkt,Windchill,Windböen,Empfang  
,,°C,°C,°C,°C,°C,°C,°C,%,%,%,lf_cb,hPa,l/m²,km/h,°,min,mm,UV-I,W/m²,°C,°C,km/h,%  
20.04.2003,21:55,21.2,11.8,11.7,10.6,11.1,8.3,6.7,39,45,0,0,200,1008.3,0.000,6.4,45,0.00,0.000,0.0,0,0.3,11.8,17.7,92.1
```

If you would like to use this generated file for CSV-file-watching for another WsWin program, so you can steer this over the "**wswinc.cfg**" file (and only there).

In Chapter [\[Export\]](#) Parameter "**NewExportTxtForImport=1**" set!

Then the necessary header for the CSV-file-watching is written down.

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# Import weather data

The import of the weather data is done for the Month/Year which is set aside in the import file name.

The structure of the import file **must** be exactly like the model of the structure of the exported monthly file with **Separator delimited text** and with the Separator char ";" .

In the import-file the first line contains the short names of the individual measurement items.  
The second line contains the corresponding units.

**The data of the first and second line are not evaluated !**

The third line **must** contain the **rain calibrating-value**, the **rain zero value** and the **Altitude, all** with a leading "#".

The fourth line **must** contain the **indices** of the measured values to be imported:

idTempIndoor = 1	idHumIndoor = 17	
idTemp1 = 2	idHumidity1 = 18	-> Normally Outdoor Sensor
idTemp2 = 3	idHumidity2 = 19	-> Sensor1 by WMR-918
idTemp3 = 4	idHumidity3 = 20	-> Sensor2 by WMR-918
idTemp4 = 5	idHumidity4 = 21	-> Sensor3 by WMR-918
idTemp5 = 6	idHumidity5 = 22	
idTemp6 = 7	idHumidity6 = 23	-> Temperature from Wind sensor by TE923
idTemp7 = 8	idHumidity7 = 24	-> Wind chill original by TE923
idTemp8 = 9	idHumidity8 = 25	-> UV X by TE923
idTemp9 = 10	idHumidity9 = 26	
idTemp10 = 11	idHumidity10 = 27	
idTemp11 = 12	idHumidity11 = 28	
idTemp12 = 13	idHumidity12 = 29	
idTemp13 = 14	idHumidity13 = 30	
idTemp14 = 15	idHumidity14 = 31	
idTemp15 = 16	idHumidity15 = 32	
idBaro = 33	idBaro10 = 37	
idRain = 34	idBaro11 = 38	
idWindspeed = 35	idBaro12 = 39	
idWinddir = 36	idBaro13 = 40	
	idBaro14 = 41	
	idBaro15 = 42	
idWindgust = 45	only at WM918 and WMR918 stations	

## Calculated Values:

idDewpoint = 43	<b>Data will be ignored at Import</b>
idWindchill = 44	<b>Data will be ignored at Import</b>
<b>idSunTime = 37</b>	<b>Data will be ignored at Import - besides one Import/Merge is activated!!</b>
<b>IdSensor Time = 39</b>	<b>Data will be ignored at Import - besides one Import/Merge is activated!!</b>

<b>WMR918</b>	<b>at this Systems are</b>	<b>6..16, 23..32, 38..42 not relevant</b>
<b>WS2000 Old</b>	<b>at this Systems are</b>	<b>38,40..42 not relevant</b>
<b>WS2500:</b>	<b>at this Systems are</b>	<b>11..16, 27..32, 40..41 not relevant</b>

idBrightn lux = 38
idSolar = 42

<b>VantagePro</b>	<b>at this Systems are</b>	<b>38 not relevant</b>
idTempLeaf1 = 9	idLeafWet1 = 25	
idTempLeaf2 = 10	idLeafWet2 = 26	
idTempLeaf3 = 11	idLeafWet3 = 27	
idTempLeaf4 = 12	idLeafWet4 = 28	

idTempSoil1 = 13	idMoisture1 = 29
idTempSoil2 = 14	idMoisture2 = 30
idTempSoil3 = 15	idMoisture3 = 31
idTempSoil4 = 16	idMoisture4 = 32

idBaro = 133 (look below)

idET = 40  
 idUV = 41  
 idSolar = 42  
 idEmpfang = 46

### TE923

idTemp6 = 7 recalculated temperature value from wind chill value  
 idTemp7 = 8 Wind chill value from TE923 station  
 idTemp8 = 9 UV-X = Original-UV-value from TE923 station  
 idTemp9 = 10 = Difference Temperature from Outdoor Temperature and idTemp 6 (ID=7)

### NetAtmo

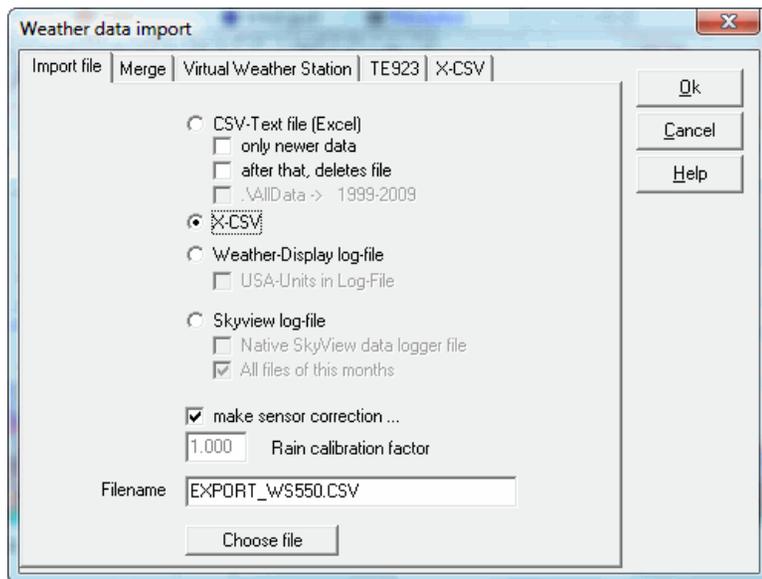
idCo2I = 13 Co2 Indoor sensor  
 idCo21..3 = 14..16 Co2 additional sensors 1..3  
 idVolume = 26 Volume  
 idBatW = 27 Battery wind sensor  
 idBatR = 28 Battery rain sensor  
 idBato = 29 Battery outdoor sensor  
 idBat1..3 = 30..32 Battery additional sensors 1..3  
 idair pressure = 133 Air pressure  
 idRain = 134 rainfall 24h -> see text below!  
 idDirWindG = 96 Unit = 1 Direction wind gusts (set unit to 1 here!) -> see text below  
 idRain = 70 reported rainfall of Netatmo (only useful if rain 24h available!)  
 idLastSeeni = 71 Inside Last seen (last seen) in seconds  
 idLastSeena = 72 Outdoor Last seen in seconds  
 idLastSeen1..3 = 73..75 Additional sensors 1..3 Last seen in seconds  
 idLastSeenW = 76 Wind Last seen in seconds  
 idLastSeenR = 77 Rain Last seen in seconds  
 idRFi = 81 Indoor RF signal (receive signal strength)  
 idRFa = 82 Outdoor RF signal  
 idRF1..3 = 83..85 Additional sensors 1..3 RF signal  
 idRFW = 86 Wind RF signal  
 idRFR = 87 Rain RF signal

### Peculiarity: is for idBaro = 133

used, so the program then expects the relative atmospheric pressure, otherwise the absolute atmospheric pressure. Be applicable only to import and export, is default value at Weatherlink/VantagePro.

idRain = 134 rain amount as sum  
 idWind = 135 **only ws\_merge** – data only over taken, if there are no Online data  
 idWinddirection = 136 **only ws\_merge** – data only over taken, if there are no Online data  
**idSunTime = 137** **sunshine time as sum (max 60 minutes) Option Import/Merge necessary!**  
 idBrightness = 138 with transform from Brightness (lux) to Solarradiation (W/m²)= ID42.  
 idBrightness = 238 **only ws\_merge** – data only over taken, if there are no Online data  
**idSensorTime = 139** **rain time as sum (max 60 Minutes) Option Import/Merge necessary!**  
 idUV = 141 **only ws\_merge** – data only over taken, if there are no Online data  
 idSolar = 142 **only ws\_merge** – data only over taken, if there are no Online data

From the fifth line on the measured values follow - all measured values **must be separated by semicolon**.  
 The first two columns contain the date and the time of the measured values.  
 A line with measured values may contain **a maximum of 255 chars !**



### File name

This input field defines the name from which the weather data are supposed to be imported from. The file name is defaulted, according to the export file name for the monthly file.

Only file names are accepted according to the model **EXPmm\_yy.CSV** - where  
 mm stands for a month number of 01 to 12  
 yy stands for a year of 00 to 99

If a file that does not correspond to this model, the import will be aborted with the error notice **"Invalid file name"**.

### Separator

For the separation of the individual data (Date, time, measured value) the semicolon is implicitly required (;)

With option "only newer data" will adopt only newer data, as existing already in last entry of the monthly file. You prevent with this that possibly entitling, own and altered data!

If a Directory/Files ".\AllData\exp\*.csv" are available, you have the possibility, to import again all these data all at once (Weather station switch!).

Since V2.99.8.7 one export file for **all data and all years** is also supported. The starting will begin what Month and Year in the filename are: Example exp\_01\_01.csv – data are imported from January 2001.

Log files can be imported also from **Weather-display**

File mask "myyyy\lg.txt"

In these log files only the data for air pressure, outdoor temperature, outdoor humidity, wind speed, wind gust, wind direction and rain amount are available however.

If this log file uses the American units (US): mph, inHg, °F, then the option "USA Units in Log File" must be chosen.

### Importing Skyview Log-Files (until V3.5)

**For importing of dates from the Access-database see under „[SkyView Access-Data import](#)”**

The log files from "HUGER weather-monitor" by the Company Skyview Systems (delivered program for the Weather Station WM-918) and/or the log files of the Skyview-data-logger can also be imported.

This import function works with **"Metric units"**, it is not known if US-units can occur also!

You should the option **"Native SkyView data logger file"** choose, when to have only installed the data logger software - without the additional Weatherview software - as in the installation statement indicated - -> or if the file **"maxmin.bin"** is missing in the SkyView data logger program folder.

The dates are stored then from the logger during the read-out in a not formatted version, this format can not be recognized unfortunately automatically (in particular if the wind sensor has been cancelled)

### Consider !

**In the data folder no mixed logger files must occur - files therefore formatted and not formatted (=native) simultaneous. You can change, however daily, if you have not selected the option "all file of a month" and/or change this option Monthly.**

If the option **"all files of this month"** is chosen, all day files of any chosen file of this month are imported. Available

WsWin data files are, in this case, replaced after a security query.

If this option is not chosen, only the data of this day file are imported and appended at a possibly available WsWin data file.

**Make sensor correction**

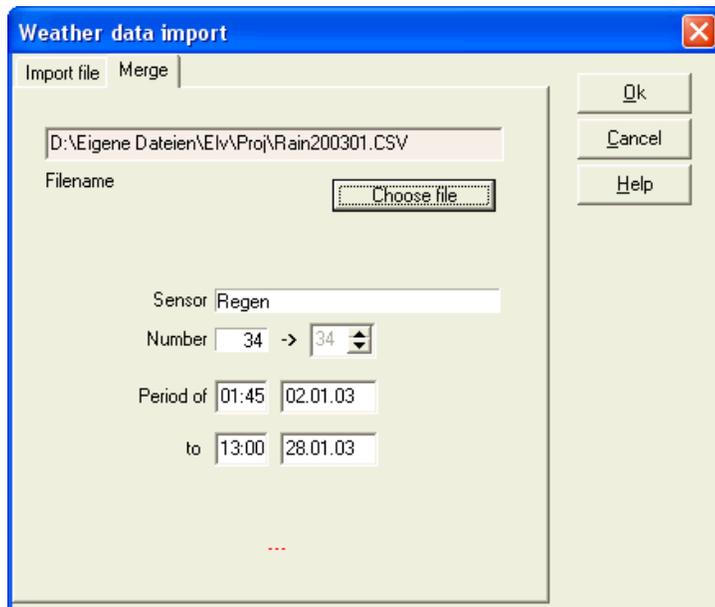
In Case of choice of these options the imported dates are "treated" with the value brought under "Properties" "Sensor calibration".

**Rain calibration factor**

If you have expanded the rain sensor with a bigger hopper, than the Weather display log files and/or the Skyview log file can consider this at the import with the factor entered here.

Default value is in 1.000

# Merge



Hereby, you have for the first time the possibility importing without prior exporting, altering, to exchange existing data to replace or to simply insert with same Sensortyp as new sensor value.

If the program accepts the file, the "data" are shown, otherwise you get a corresponding information. You let also normal "monthly export file" brought together, with what however only here always the 1. sensor value can be taken over.

The under weather data exported "separate month sensor export file" is very well suitable for it.

The program takes on that occasion even **different record intervals** into account.

- if you have same Sensortyp (for example temperature), you can bring together the data as new sensor.
- with time „Period of“ you limit for which time data values should only be taken over.  
For example if a sensor was canceled, you steer hereby that only the faulty data are replaced.

If you want "to bring together" a complete month, maybe it is meaningful so to always alter the time period of the found data on **00:00 and 1. day in the month and 23:59 and last day in the month!**

**If you choose an invalid day at „Period of“ (for example 30.02.) the merging doesn't start!**

If you want to bring together a "rainyyyyymm.csv" file and the found time period data don't adjust according to above-mentioned hint, you should following heeding:

The program places system-induced the 1. rain value in the 1. data record of the month, in order to prevent, that rain values are lost!

-> better you always alters in such a case on 00:00 01.mm.yy.- 23:59 dd.mm.yy.

For example, if you want to sign over/reset one to sensor value with a certain value, you can reach that with help of this small export file: (2 value lines always must exist in it!)

The date format is dependent on your chosen system date format in the system control!

**File: exp10\_01\_id40.csv**

Date,Time,ET

„mm

#Calibrate=1.000 #Regen0=0mm #Location=802/844m #Baro\_correction=99hPa #Station=VantagePro Plus

„40

01.10.2001,00:00,0.000

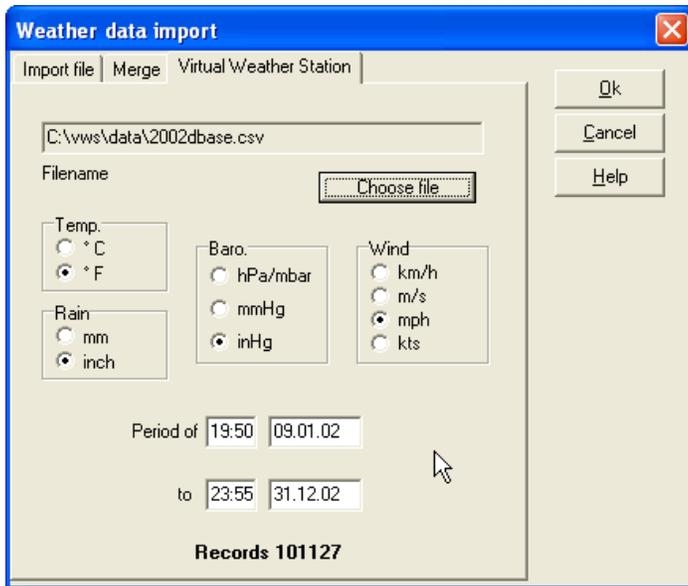
01.10.2001,00:01,0.000

Alter the date and store the file of the date accordingly: here **exp10\_01\_id40.csv**

You then boast with time period **00:00 01.10.01 to 23:59 31.10.01**

All ET values then (in this example), are reseted to 0,000 mm!

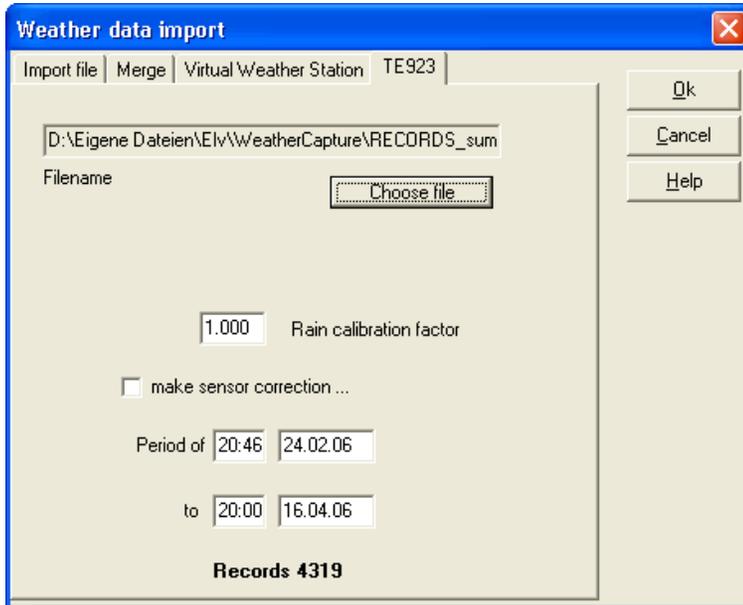
# Virtual Weather Station



If you want to transfer data from the Software **Virtual Weather Station** (VWS) into this program, please pay attention to following:

- ✓ It is checked, whether it is a data file from V10.xx (older files I don't know)
- ✓ The program cannot recognize, in which unit the wind and the rain quantity in this file are available, therefore necessarily check the preselection of the program.
- ✓ If already WsWin - monthly file(s) exists, only **newer** data are imported for this month.
- ✓ Even if is registered already a file name, you necessarily should confirms this selection with "**Choose file**"!
- ✓ From V2.08.0 all fields (former only the first 18 fields) are taken over:  
WindDir, WindSpeed, WindGust, IndoorHum, OutdoorHum, IndoorTemp, OutdoorTemp, SLBarom, Rain, C1 Temp, C1 Hum ... C10 Temp, Temp, C10 Hum, ET, UV Index, Solar, TWH, TWHS.
- ✓ the sensors 4-7 are stored as ID13...ID16 and ID29...ID32
- ✓ the sensors 8-10 are stored as ID10...ID12 and ID26...ID28
- ✓ TWH is stored as ID9
- ✓ TWHS is stored as ID8

## TE923



Possibility of the import of the RECORDS.txt of TE923-program WeatherView and/or WeatherCapture.

- also the weather forecasts are taken over
- it is attempted the Windchill value (the wind sensor has for this purpose an own temperature sensor) to assign back onto the measured temperature value as Temp 6-value.
- The UV values are imported with a fixed factor by 0.444 - in this way same representation as at VantagePro.
- In case of faulty values, the last valid value is taken, except for it gives no last valid value, then „0“ is used as value.

## X-CSV (wswin\_x-csv\_import.cfg)

Hereby, you have the possibility each text-been data file, that has a certain structure, to process. The structure is deposited in a **wswin\_x-csv\_\*.cfg** data file. You can make many of such file, However if you would like to use File-Watching, this file must be named **wswin\_x-csv\_import.cfg**.

**Separator:** ist das Zeichen mit dem Daten getrennt werden

**Date (+Time):** Definition of the date- (+ time-) format. Only 2 digits for day- "dd" and monthly-formats "mm" are allowed. If Date and Time are not separate through any delimiter, in this field the date as well as the time -format has to be declared. Year: can be "yyyy" or "yy".

**From Version V2.97.11 also single- digit for dayly and monthly formats are allowed (d.m.yyy)**

**UTC:** Data are UTC-values

Example: **zzzzzzzzzzzz** = UnixEpochTime (unixepoch) - **yyyymmddhhnn** or **yyyy-mm-dd hh:nn:ss**

For minutes "nn" must be used.

**Time:** Hours „hh“ and Minutes must be 2 digits – For Minutes is as well as „mm“ also as „nn“ allowed.

– from Version 2.97.11 also „h“ (**h:nn**) for hours is allowed.

**Skip:** The here put in number of lines doesn't contain any data.

*DATE\_TIME;CHN0\_DEG;CHN0\_RF;CHN0\_DEW;CHN1\_DEG;CHN1\_RF;CHN1\_DEW;CHN2\_DEG;  
04.02.2007 23:26;18,3;44;5,8;-2,8;92;-3,9;10,1;*

**FillChar:** If spaces still exist before the actual values, this is to be chosen.

*00:05:00,01.03.09, 7.37, 1010.21, 0.00, 0.00, 6.81, 355.01, 98.77, 0.00*

**PreChar:** If text-parts still exist before the actual values, this is to be chosen.

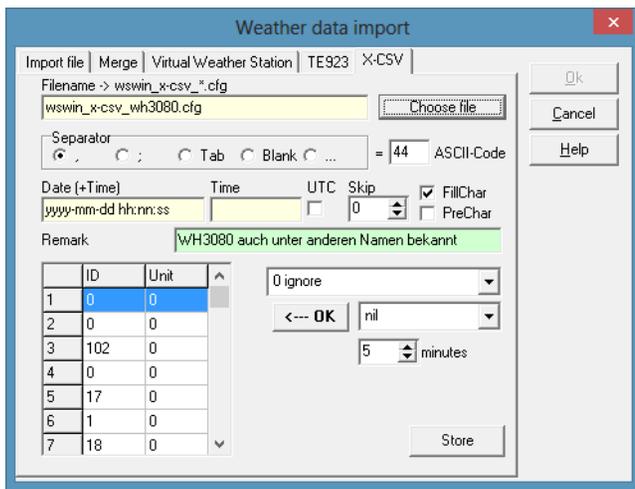
*00:05:00,01.03.09,TE7.37,DR1010.21,UV0.00,SO0.00,ZB6.81,WR355.01,FE98.77,RE0.00,RD0.00,WG0.00*

Fill Config-File:

**In first selectable field, you choose the function:**

<b>0 ignore</b>	Ignore Data!
delete	delete marked linie
insert	at marked line insert a empty line
100 Date	Date entry accordingly above chosen format
101 Time	Time entry accordingly above chosen format
102 Date+Time	Date- and Time entry (or Time-/Date entry)
<b>105 Time + Date</b>	necessary for single-digit hours/day/monthly data e.g. <b>h:nn d/m/yyyy</b>
<b>106 Date + Time</b>	necessary for single-digit day/monthly/hours data e.g. <b>d/m/yyyy h:nn</b>
<b>107 Date + Time AM</b>	necessary for American month/day/hour data e.g.. <b>d/m/yy h:nn AM</b>
201 Year	Year
202 Month	Month
203 Day	Day
204 Hour	Hour
205 Minutes	Minutes
1.. Senors	only sensors available to the disposal by the chosen weather-station
Special cases:	133 relative atmospheric pressures– 33 absolute atmospheric pressures
	134 total-rain-amount – with <b>cal</b> as unit = rain calibration factor
	137 total sunshine time (also Import/Merge must be activated!)
	138 additional to Brightness the program calculates Solarradiation
	139 total time = rain time (also Import/Merge must be activated!)

**In the second selectable field, one chooses the unit of the values - default is metric = nil**



With X-CSV "only newer data" and "make sensor correction" are always active, also without corresponding selection!

From Version V2.97.11 on also Unicode-Files (UTF8, UC\_1e, UC\_be) are supported.

If the program meets such a data file, it converts the data file into the ANSI-Format and stores it for processing as "~\_%Filename%" (join in the front "~\_" at the file names).

**Unicode- files momentarily are not supported at File-Watching.**

Experience: With data of the weather-station Reinhardt (for example WMS9), previously a correction factor of 0.001 is set at Sensor properties with the UV-Sensor, for Temp indoors an adjustment factor of 0.01 or 0.02.

The program gets the data file that should be used with X-CSV-File-Watching from the wswin\_x-csv\_import.cfg and for that reason the import must be carried out here for the first time.

If X-CSV-File-Watching was chosen and wswin\_x-csv\_import.cfg is chosen, the program corrects automatically the Watching-data file if one chooses here a new data file (for example at monthly-change).

### Importing general:

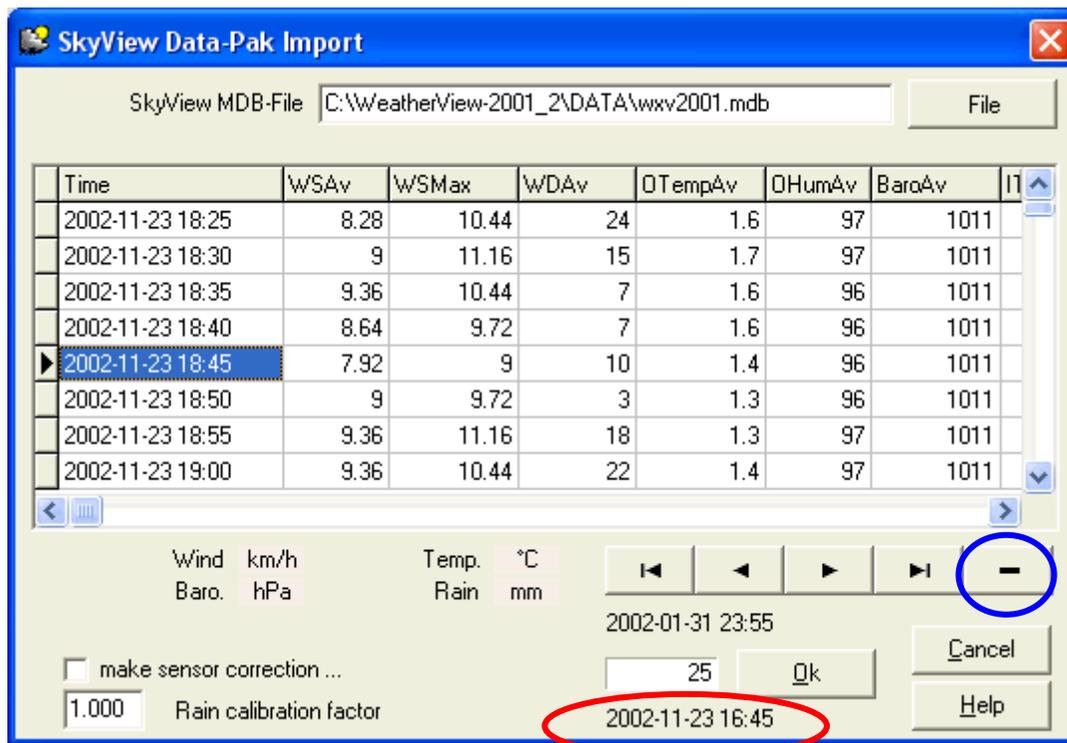
If dates occur with import, which are not relevant for the "chosen" Weather station, they are ignored.

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# SkyView Access-Data import

The import of the meteorological data begins in the **month** on which the „View“ stands !!



For this function an **ADO interface** must be available – also look for that under [Weather conditon](#)

With the call of this function the database is searched, from which position the dates are supposed to be taken over - therefore something can already last it, according to database size, until something is announced !  
The found data record record (here 25) and the beginning of the incorporation (here 2002-11-23 16:45) is announced then.

If no newer dates for the incorporation are available, the "Ok" button is deactivated and has then no „function“

The reference point like far "back" is looked for, that is month where the representation stands momentarily!

Example:

View/Representation stands at January, 30 2003

Current Date is June, 25 2003

- ✓ The program seeks incipient in the data base beginning on the record on the 25. June back until January 1 2003 and find then the dataset 00:00 .. 1. January 2003 or newer.
- ✓ There here everyone record must "be touched", this **can very, very long lasts!**

You have with the " - " button also the possibility to delete data-records (for example: for the values occurring again and again in the future).

If values with "-999" (that is value not available) are found, then the program set „0“, except for, a valid value was before available, so the **previous value is reflected**.

Next to **wind, air pressure, temp., rain** the units used in the database are performed here.

## SkyView MDB-File

Here the chosen Access-database is announced.

A direct input/change is not here planned.

Please select the file with the button „File“.

The dates are loaded month overall up to the last one available record.

**Consider!**

With available WsWin date files, only **newer** dates are **coupled up** in this case.

Therefore it is possibly necessary, to delete before available date files!

**Make sensor correction**

In case of choice of these options, the imported dates are "treated" with the value brought under Properties "Sensor calibration".

**Rain calibration factor**

Who has expanded his rain measurement with a bigger horn, must / can let consider this at the import here with the help of the factor to be entered.

Default value is **1.000**

Funktionen

Inhalt

# Converting weather data

With this function it is possible to convert a weather data file of the program PC\_Wetter (V2.x - ELV/Conrad)=WS2000, WS2500 (= with Brightness sensor) and WS2300 (Weather station from LaCrosse) into the format of this program.

The data format should be recognized **automatically** and is **announced** then correspondingly.

The "sun dates" of the **WS2500**, are taken over only, when as a **weather station "WS2500"** was selected,. In case of incorporation of the dates of a **WS2300** station **every "weather station"** can be chosen, however it must be noted, that the air pressure correction factor was entered (under "Weather" "Location") correctly, since the air pressure values to be stored there as standard measure air pressure (therefore no retention of the sealevel pressure!).

**Example: absolute 915 hPa air pressure– relative 980 hPa air pressure**

Dates of the **WS2300** in front of the **2001-1-1** are put onto **this date** !!!

With **Create Export-File(s)** CSV-file(s) become - according to the chosen period draws up - for every month an own file. Available export files are overwritten in this case without prior warning !

With **Create weather data file(s)** weather data monthly files are created for this program - for each month an own file. If there is already a corresponding weather data monthly file, the data are appended to that!

**NEW** If there is **already a corresponding weather data monthly file**, so only **newer data are attached to it!**

One should choose the "**correct**" start date or should delete the weather data file "**manual**" previously!!!!

With **Period of** the available weather data are displayed.

Here the possibility exists to choose the period for converting correspondingly.

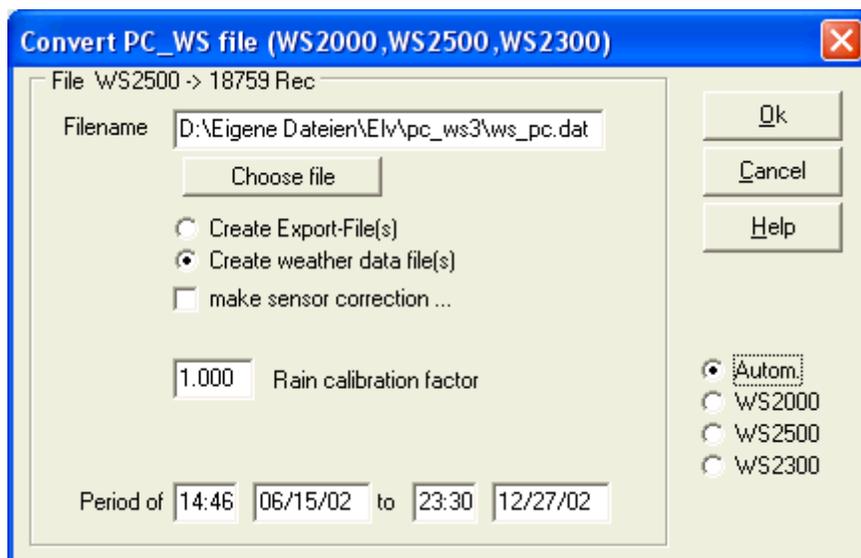
## Make sensor correction ...

According to the settings under "Properties for sensors" the "Sensor calibration" entered there are applied onto these dates.

## Rain calibration factor

Since the PC\_WS software works with metering pulses for the rain amount, it is necessary to indicate the corresponding **rain calibration factor** here for a correct conversion.

Normally this factor should be at WS2000, WS2500 -> **0.360**



## WS2300

While converting the WS2300 files, a part of the dates of the first chosen data record is shown than. The value in clips according to **B:?????** - here for example **(+93)** - is that one, in the system adjustment value deposited to the back reckon onto the station air pressure value. (look to that under Location)

**This program always works in an intern way with the station air pressure -> not related to the sea level reduced air pressure.**

→ **besides with weather station election "VantagePro"**

After my experiences, there are date files, that employ the absolute air pressure (= station air pressure) in the file and other, that include the relative air pressure (=Sealevel air pressure) = is alike the higher air pressure. You can/must control this circumstance with the option "**WS2300 Barometer = rel. Pressure**".

→ **Program shows the atmospheric pressure would use from your chosen options behind this option = last record in the file and therefore should agree with the current display** (with what the after-comma values are taken over only with election with weather station "VantagePro!") - **blue circle sees**

If you are uncertain, which atmospheric pressure value actually now stands in the HeavyWeather-Data, so you put under weathers, station the location height for the calculation of the atmospheric pressure on **"0" meters** and as well the WMR/WS2x00 - atmospheric pressure correction value at **0 hPa**. Are now the atmospheric pressure data, that WsWin shows (after new converting) **lower** then in the display of the WS2300 than with the ad of the relative atmospheric pressure, so the atmospheric pressure exists in this file as **"absolute atmospheric pressure"**

### Rain calibration factor

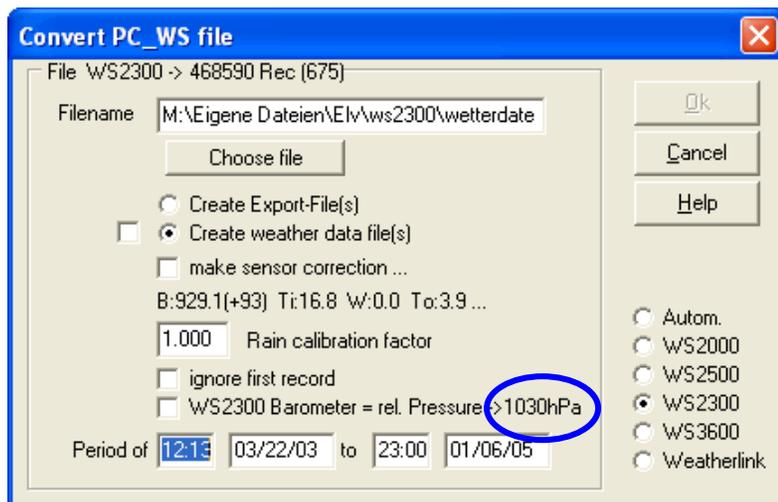
Who has expanded his rain measurement with a bigger horn, must / can let consider this here. Default value is **1.000** (allowed range 0.001... 4.999)  
This value is a **factor**, i.e. with enlargement about the double must stand here in 2.000.

Furthermore, one has the possibility to jump the "first record" here, since usually wrong time.

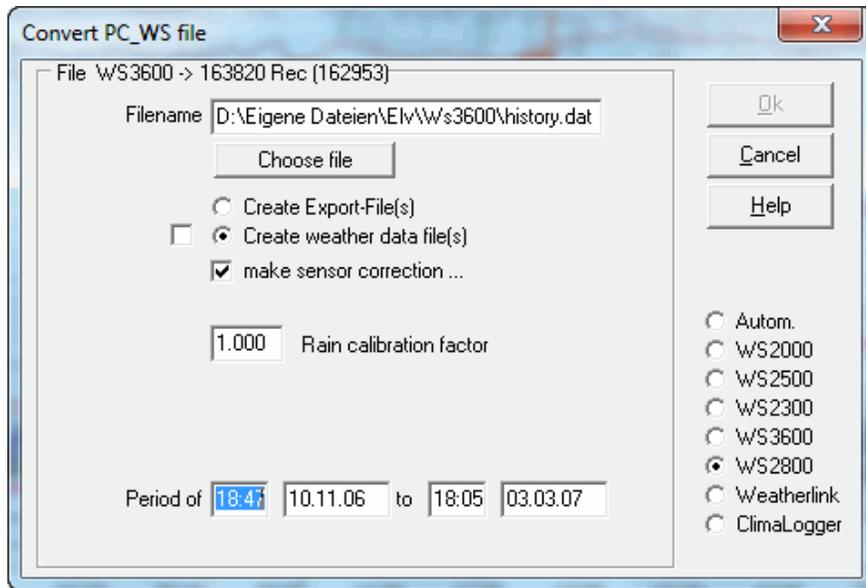
### Data format choice:

Usually the program recognises the data format automatically. However, under specific circumstances between a WS2000 and WS2300 data-format can not be distinguished. Therefore I recommend every **WS2300-user** to set the data format to **WS2300** also firmly. At the **only to converting** this wrong recognition through, that then no time values are recognised and this option can't be activated/started. You use the function, "File watching" in connection with a **WS2300 data file**, should absolute, then **"WS2300"** as origin data format select.

**Attention!** In the data file of Heavy Weather appear the date-/time values as **UTC time**, that is, when your internal time- / date settings in Windows or in the display **WS2300** are not correct, the shown dates (time/date) don't agreeing with the actual factors.



## WS3600/WS2800



### Settings for the Weather Station LaCrosse WS3600/WS2800

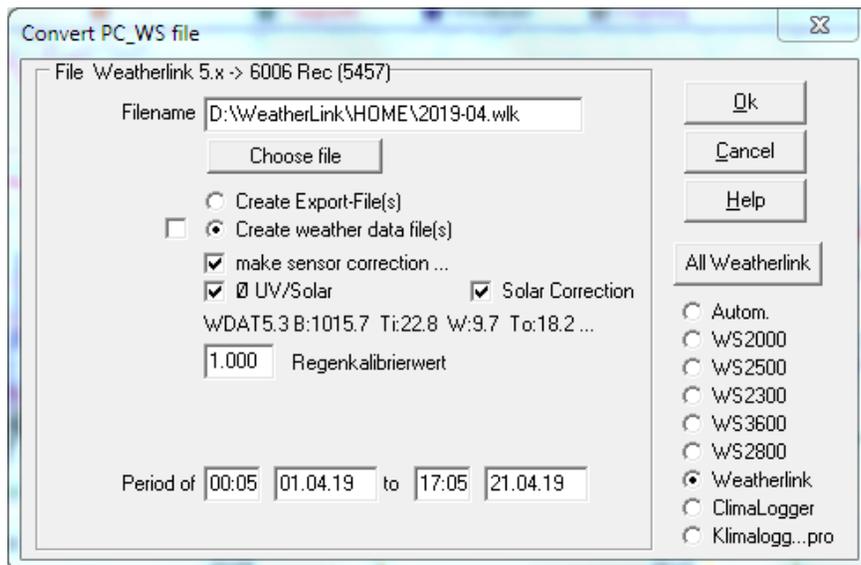
If you use a modified **rain sensor**, you must match the **rain calibrating-factor**.

At the air pressure the absolute air pressure is taken over plus correction through the program according to the station altitude. That is, if you have set a wrong value for the attaining of the relative air pressure at the station, you have over the program the possibility subsequently to correct this.

Look, that the correct station altitude ist set!

**Difference WS3600/WS2800: with the WS2800, only the relative air pressure is available!**

## Weatherlink 5.x (VantagePro)



With the takeover of the data of the Weatherlink 5.x software, there are following restrictions:

- by the 8 practicable extra Temp. / Hum.Sensoren, only 7 are supported (the VantagePro delivers actually only 3 temperatures / 2 humidity sensors)
- of the 6 practicable Soil temperature / SoilMoisture sensors only 4 are supported
- for UV and sun radiation is taken over the maximum value of the storage interval
- If the very last record of a monthly file falls on 24:00, this time is put back to 23:59! (with DAVIS is 00:00 -> 24:00 o'clock?!) example Weatherlink 2003-01-31 24:00 -> WsWin 2003-01-31 23:59
- When **Rain** or **Evapotranspiration** fall exactly on **00:00**, this value becomes with the Weatherlink-Software the violated day added to, with WsWin to the new day!
- the minimum outsides - temperature values of the record interval is presented as own sensor value  
-> as temperature sensor 5

- the maximum outside - temperature values of the record interval is presented as own sensor value  
-> as temperature sensor 6
  - Missed data are „filled“ with the valid data here (Weatherlink uses 255, or -255 or -32763) as well as "0" for example Evapotranspiration.
  - the program reproduces the weathers - forecast - Icons of the weather station (sees to it also under „Weather“, „Weather forecast“)
  - Because the new Weatherlink-Software V5.4 also supports the DAVIS stations: Monitor, Wizard and Perception, this stations are supported automatically!
  - If the VantagePro reports wrong Solar radiation values (cold or wetness problem of the Solar Sensor) the program corrects at defaults such values. Sometime this detections (depends of Location) is wrong, so you can disable this correction here.

If you must correct the rain number, since V2.85.0.3, you can use also a rain calibration factor!

### Consider!

So that WsWin can adopt also **all data** of the VantagePro/Weatherlink, the "**Automatic Download**" of the data must be **set and activated** in the Weatherlink software on the **storage interval of the data logger** (1, 5, 10, 15, 30, 60, 120 minutes)!

Download can also be done over the 3 as well as 8 (V5.6) practicable internet - profiles!

If the "Automatic Download" is higher than the storage - interval of the logger, so intervening data are nevertheless adopted -> **NEW! from V2.83.0**

Example: Auto Download: **10 minutes**  
Storage Interval Data-Logger: **1 minute**  
WsWin take over the data only **all 10 minutes and show then all the data!**  
-> **normally should no data lost.**

### All Weatherlink

You have the possibility with that, all Weatherlink files at once to let converting automatically!  
Consider! If a corresponding WsWin VantagePro monthly file (wd\_mm\_jj.dat) exists already, this is omitted -> there are only absent monthly files converted.

If you would like that this file is nevertheless converted, so to have previously deletes the corresponding WsWin - monthly file.

Or converts as separate month (not "All Weatherlink").

... being converted can last already something – therefore not impatient becomes!

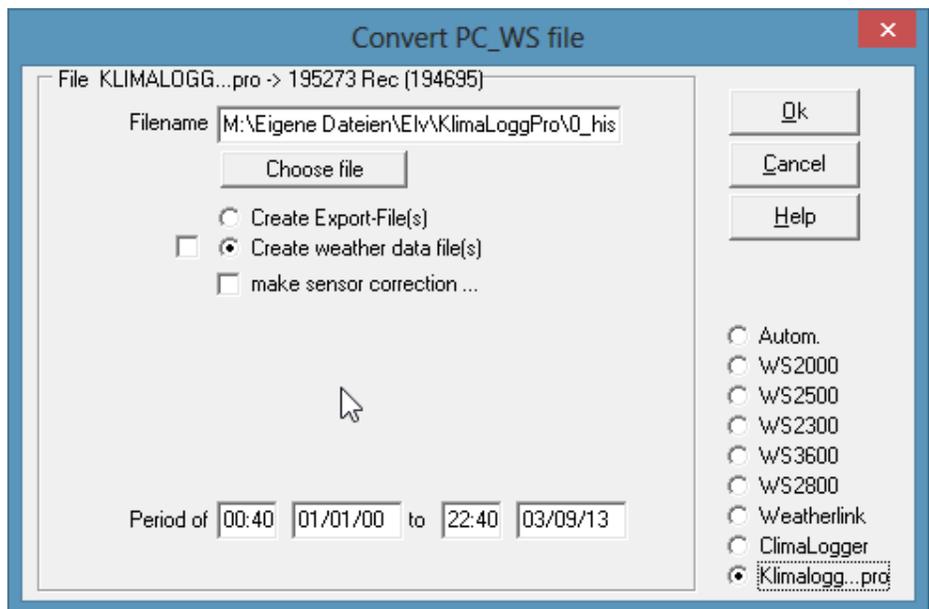
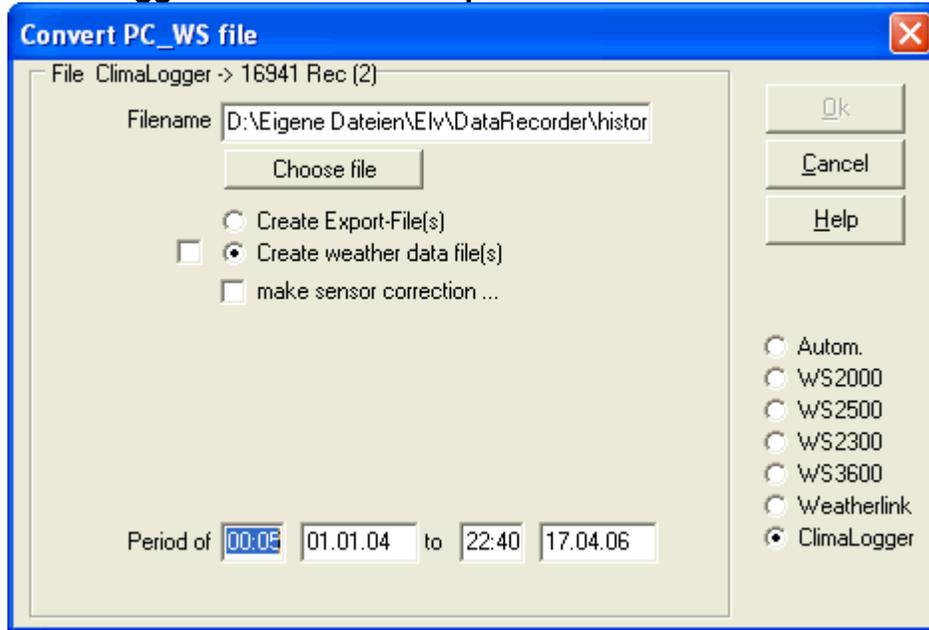
Following settings are employed also with the function „File watching“ and/or. must choose here.

- **Automatic choice or chosen data format**  
**(WS2000,WS2500,WS2300,WS3600,WS2800,Weatherlink)**
- **WS2300 Barometer = rel. Pressure**
- **Make sensor correction**
- **Solar correction**

During selection of the corresponding export option you can choose lately in addition, whether the program from file beginning (at data files)  
not upon reaching the time (at CSV-files)  
the converting terminated.

Since sometimes in the files to be converted errored **time dates** occur, you have with that the possibility onto all dates to access.

## ClimaLogger – KLIMALOGG...pro



Possibility of the takeover of the data of the TFA Data Recorder and/or Thermo - Hygro Data Recorder.

### **Caution!**

If you want to use File-Watching for the Climalogger, must make the first selection here, otherwise the data-file of the ClimaLoggers is not recognized correctly!

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# Choose printer

**For the perfect functioning of this program at least one (arbitrary) printer must be installed.**

This function allows the selection of the printer which is supposed to be employed for the printing of graphics and lists in the Operating- and Data Acquisition Software.

The setting is valid only within this program. The chosen default printer under Windows remains unchanged by this selection.

## Printer

This list allows the selection of the printer which is supposed to be employed for the print-out.

**Note !** The chosen printer can be different in the 16-bit-Version from the 32-bit-Version (When you work simultaneously with the 16- and the 32-bit-Version !).

## Font

With this list the font can be chosen for the printing.

### Option: Colour printer is not able to print grey scale (scales are missing!)

Some older colour printer drivers can not print any grey.

In case of the colour graphics printing for example the scaling is missing.

If you choose this option, the grey lines of the scaling (X-, axis of ordinates, time scale and so on) are printed in black.

If you choose grey as line colour for a measurement value (default line colour for the wind direction is GREY), this line colour is not carried out. You should then choose another line colour for that.

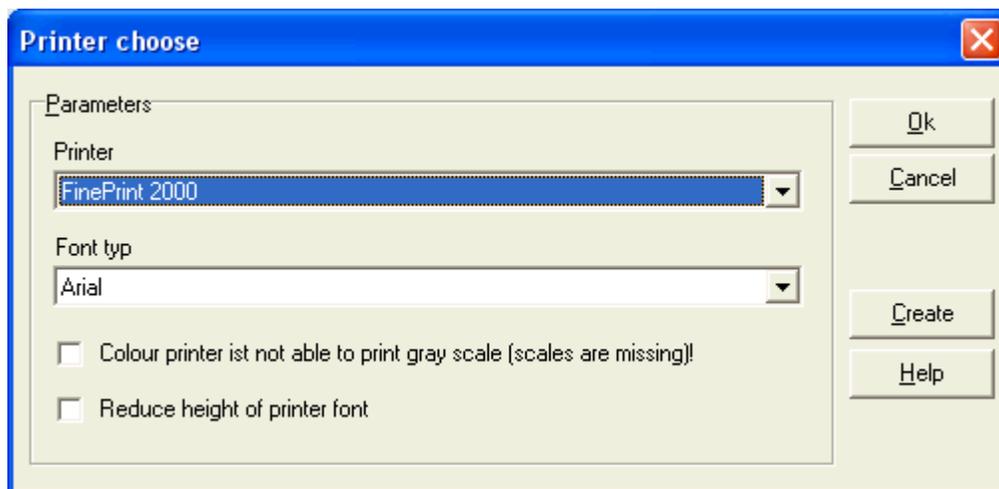
Another solution would be to let the colour printer print "Black on white".

### Option: Reduce height of printer font

In case of the graphics printing legends appearing too great and/or being written into the scales, you should reduce the character size with this option.

## Create

This command button allows the modifying of the corresponding qualities, as for example the print quality, for the chosen printer.



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# Print graphics

So that the evolution of the weather data can be analysed also independently by the personal computer over a longer period, the printing of the corresponding processes is recommended. The monthly printing of the needed measurement items is reasonable for example. The graphics are printed in this case in accordance with the View chosen on the screen in the horizontal format.

## CAUTION!

In order to make the printing independent of the printer solution, the graphic card solution and the used window display, the maximally possible display is chosen when printing graphics, **after the printing it switches back to the previous representation !**

Before printing you should first choose a printer with the function Choose printer .

If the print should not correspond to the expectations, just check your settings at Choose printer!

Functions

Contents

# Options

With this function the operation of the Operating- and Data Acquisition Software can be adapted to your own wishes and needs. The read-out of the weather data can be started, for example, from the wireless interface automatically.

## **Automatically read out weather data at start**

### **- not available for WMR-918**

This check box determines, whether the weather data are read out during the starting of the Operating- and Data Acquisition Software automatically from the wireless interface. The manual call of the corresponding **Functions** is not necessary any more in the menu "file". Simultaneously the loss of data not read out because the manual call was forgotten can be prevented by this.

## **Automatically close program after read out**

### **- not available for WMR-918**

This function allows the automatic closing of the Operating- and Data Acquisition Software after the read-out of the weather data from the wireless interface. This is for example reasonable, if the personal computer is supposed to be turned on only for this time and is supposed to be switched off then again. The automatic closing can be prevented within 10 seconds by an interrogation.

## **Automatically start recording at start**

Through this check box the **Weatherdata read out** can be activated automatically during the start of the software and the simultaneous display of the measured values. Further to the continuous saving of the weather data all sensors can be observed thus on the screen simultaneously.

### **In this case automic import/convert data**

This option is only available with „**File watching**“ or WMR stations and here if a SkyView logger file was imported already once.

With this option your data remain automatically always curren, when you "drive" a "mixed mode" between direct Recording-Mode (File watching and/or Online) and data logger using.

**This option is only available in the registered version.**

## **Automatically minimize program at start**

For the continuous recording of the weather data it is reasonable to call the program automatically with the program group "Autostart" during the start of Windows already. With this function the main window of the Operating- and Data Acquisition Software can be minimized during the start automatically so that you can work with other applications immediately.

## **Automatic search for new sensors at start**

### **- not available for WMR-918**

With this option a search for new sensors is carried out each time during the start of the program and these sensors are included in the evaluation at the same time. See also at **Available sensors**  
Default is on.

## **Check read in weather data to plausibility**

With this function the sent weather data of the PC wireless interface are checked and if recognized as erroneous corrected automatically. Erroneous data can arise for example from interferences of the sensors.  
Default is on.

## **V1.0 Interface: check for time correction**

Under specific circumstances, it can not be recognized whether a time correction is necessary.

With this option it is not checked anymore whether a time correction is necessary.

This option does not concern the new interfaces V2.x - therefore here deactivated.

## **Synchronize PC clock with DCF signal**

### **PC-wireless interface:**

With this selected option the PC clock is synchronized during the start of program with the DCF radio time (only by valid DCF-reception). With the 32-bit-application and under Windows-NT/2000 corresponding user authorizations are necessary for this purpose!

### **WMR-918:**

**WM-918 has no DCF-receiver** – therefore this option has no function for this station!

Every full hour this Weather station sends the data and/or every minute. If this option is chosen, the computer clock is set to this time, when there is a deviation larger than 1 minute. With Windows-NT/2000 corresponding user authorizations are necessary for this purpose.

If you want to lock always in case of conveyance of the hour information, independently of the deviation, then set in the file "**wswin.cfg**" Section [Settings] **ForceDCF=1**

### **Autom. Export Datarecord -> import**

At the storage of a new data record, these data are written automatically also in data file **ws\_newdata.csv** with it -> utilization as backup...

### **Month -> autom. Create Export file**

At the program-start or after midnight, the monthly-data file **EXPmm\_jj here.CSV** is created in data dictionary.

### **Show status information ...**

By choosing these options detailed information are available in connection with the wireless interface.

#### **PC-wireless interface:**

On read-out/saving of the weather data in the left status bar field:

- the currently read in "time value" and the "block no. are shown -> for example "**1 B173**".
- at plausibility correction the corresponding erroneous sensors are shown
- in case of check sum error the first 6 bytes of the read in data records are announced.

Condition: **Statebar** turned on.

In case of displaying **Status of wireless interface:**

- Show the read in values with plausibility values and influence on these values.
- Show whether the (only new interface) data record last read in is up-to-date
- during the recording of the weather data and simultaneous display of the wireless interface status the status of the display is updated automatically after every newly read in data record.

#### **WMR-918:**

During the saving of the weather data in the left status bar field the following is displayed:

- the data record sent in last with time -> for example "**Si: 20:34:00**".  
if the display bar is switched off, the data are listed additionally  
-> for example (for IndoorSensor) "**Si: 20.1°C 86 % 20:34:00**".(Values not by WM-918)
- in case of check sum error the check sum and the correct value.

Condition: **Statebar** turned on.

### **Show Sensor Status in Colour**

#### **PC-wireless interface:**

In case of chosen option the status text is displayed in colour additionally (Only chosen sensors are considered):

- Green** All chosen sensors are "ok"
- Black** At least one sensor has 1 to 3 reception failure rates.
- Yellow** At least one sensor has 4 to 7 reception failure rates.
- Red** At least one sensor has 8 or more reception failure rates.

#### **WMR-918:**

- Yellow** in case of minutes or hour-status: Main unit has weak batteries
- Yellow** in case of sensors - the announced sensor has weak batteries

### **Log interface data transfer ...**

If this option is chosen, all activities are recorded on the chosen COM-interface and saved in the file "WSWIN.TRC". This file is not written on the main disk, however, before the termination of the WSWIN-programs and the data are added always to an available file!

The chosen buffer size (in wswin.cfg -> TraceSize) determines how many data per start of program are supposed to be recorded. The version 32-bit has a maximal adjustable size of 400 000 and the 16-bit version 32760 -> with the 16-bit application it is not possible to log a complete wireless interface buffer with 1024 and/or 512 data records. This option should be turned on only to trace errors of the communication with the wireless interface and/or if somebody likes to evaluate this file in another way in addition.

## Log error (communication, data correction)

In case of choice of these options errors of the serial interface communication (checksum errors ) are saved in the file "wswinerr.txt".

In the same way the measured values corrected by the plausibility check are recorded in this file.

**Sample:** 12.03.2000 21:23:16 10.03.2000 10:15 Z3548 B728 T0 eingel. Wert 0.0 PlausWert 20.5 PAnz. 1  
(Report time spot; Measured value date/time; Time value; Block value; Measured value; read in value; adjustment value; correction number)

There is an additional parameter to it in the WSWIN.CFG:

### [Options]

ErrorLog=1

ErrorLogHead=0

If one puts this value on 1 (ErrorLogHead=1) and error logging is switched on (ErrorLog=1), the start and stop-data of the wireless interface communication become additional to the errors each Wswin- program start recorded!

## Debug

Becomes additional "debug"-files with it - sees [File](#) as well as additional info in the status bar. With the **options 1..8 (9 ..16 = reserve)**, one can activate DEBUG-Modi additionally. The to activating function is shown if one points to the activation field with the mouse.

It should be activated only to the debugging.

## Minimizes -> SystemTray

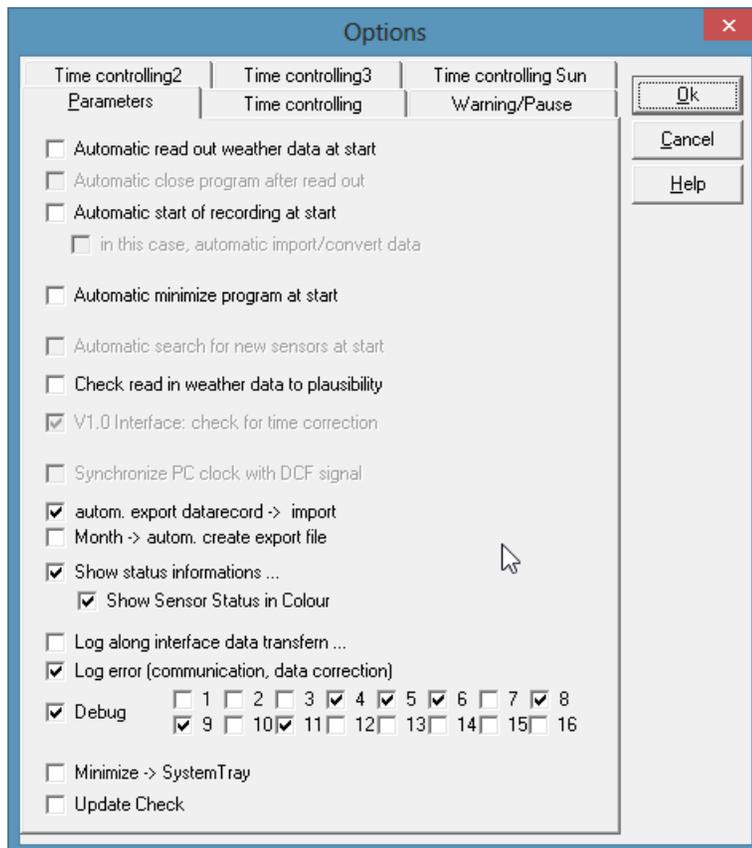
The application is hidden when minimizing in the SystemTray!

**Consider!** WsWin supports two types of the program minimization:

- ✓ **Application minimizes: it is minimized the main window and the open windows with it**  
-> in program task bar: double-click on application name or after right mouse button of minimizing chooses.
- ✓ **Windows minimize:** for example **only main windows minimize and display windows represented leaves.**  
-> in program document header: Minimizes chooses (left) of or minimize symbol (right outside) clicks.

## Update Check

The program tests at program-start (or under Help, Info about...) whether a new program-version is available.



## Time controlling

With that, you can to the corresponding action at the time and weekday.

Or for test purposes to let carry out the action only once.

The function "**Power off**" must support also your hardware, otherwise you must switch off the computer by hand.

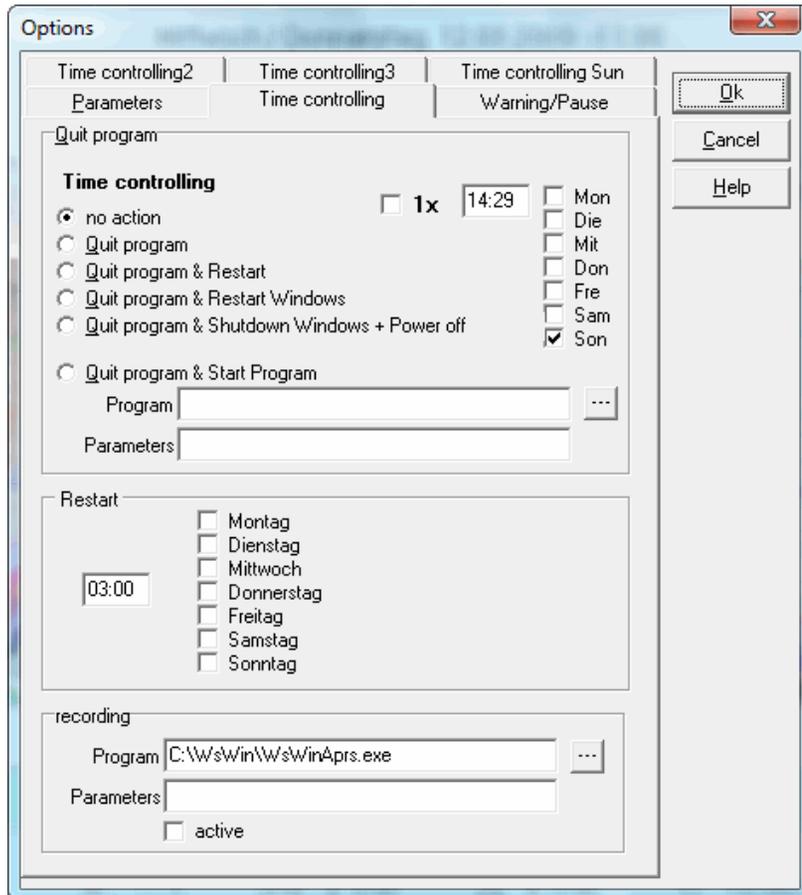
In case of **Restart** you have the possibility to automatically restart the program and independently of the time controlling.

With „**Quit program & Start Program**“ has you the possibility to reach this, for example with malfunction of "Shutdown Windows" over a "external program".

## Recording:

if an entry is available here and this file also is found, this file executed in the record-operation after every new data.

Heed also the possibility of the timing control over the [ws\\_controll.cfg](#)



## Extra:

### Additional timing control for tasks during the day:

With minutes offset, you can "postpone" the "execution" for the corresponding minutes:

for example 11 minutes of offset and update **3h** so the program execution occurs at 00:11, 03:11, 06:11, 09:11, 12:11 and so forth.

In the case of election **24h** the program execution occurs in each case at 12:00 + **offset minutes**.

## Extra1:

The peculiarity of this "timing control" is that one can pre-set here, that the before started program is ended by Wswin after max of 59 minutes and 59 seconds again, should it still „run“.

At **00:00** (= 0 minutes 0 seconds) the function „close program“ is not **active**.

Wswin needs the window title of this started program for it.

If no title is declared, the program name - here VWSaprs - becomes as assumed titles.

However, this assumption is mostly not right for this cases!

-> then cannot be close the started program either!

Who declares a **window title**, should assure, that the CORRECT one is specified, there the program with all started programs the first arise this text's searches and **closes** in this case possibly the "incorrect" program.

-> **always declare the complete window title!**

**Option "A"**: the program is started in the rhythm of saving a new data record.

## 1h: xx:xx - xx:xx

If you input a time unequally 00:00 here in, the program uses a „hourly interval“ during the set time and **chosen interval larger then 1h**

**Example:** 3 minutes Offset, Interval 3h, 1h: 06:00 - 18:05

The program executes this function at 00:03, 03:03, 06:03, 07:03, 08:03.... 18:03, 21:03

Options

Parameters | Time controlling | Warning/Pause

Time controlling2 | Time controlling3 | Time controlling Sun

Extra

A  X  5m  10m  15m  30m

0 minutes Offset  1h  2h  3h  4h

6h  8h  12h  24h

Test 1h: 00:00 - 00:00

Program

Parameters

Extra1

A  X  5m  10m  15m  30m

0 minutes Offset  1h  2h  3h  4h

6h  8h  12h  24h

Test 1h: 00:00 - 00:00

Program

Parameters

window title

-v -s: "C:\Wswin\VT\ftp\_sendpuretec.txt"

00:00 mm:ss Quit program

Ok

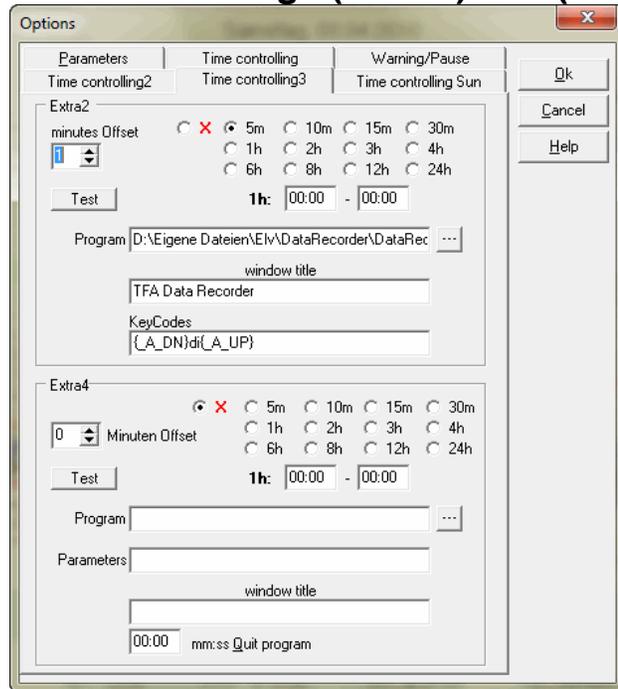
Cancel

Help

**You can combine the Time controlling2/Extra1 with the Time controlling3/Extra2 or Extra4:**

For example with Extra2 starts a program, with Extra3 this program control with key codes and then close the program after the set time (Quit program).

## Time controlling3 (Extra2) and (Extra 4)



Time controlling with the possibility to steer a „other program“ with key codes.  
**A input of the window title is absolutely necessary for this purpose!**

With **Test** you can verify your settings and the function.

If you want to control the TFA Data Recorder in this way, you use as  
**Window title: TFA Data Recorder** (or **Thermo - Hygro Data Recorder**)

**KeyCodes: {\_A\_DN}ai{\_A\_UP}**

Settings für spezial keys:

{_BKSP}	Backspace
{_TAB}	TAB-Key
{_ENTER}	Enter(Return)-Key
{_ESC}	Escape-Key
{_F1}	Function-Key F1
{_F2}	Function-Key F2
{_F3}	Function-Key F3
{_F4}	Function-Key F4
{_F5}	Function-Key F5
{_F6}	Function-Key F6
{_F7}	Function-Key F7
{_F8}	Function-Key F8
{_F9}	Function-Key F9
{_F10}	Function-Key F10
{_F11}	Function-Key F11
{_F12}	Function-Key F12
{_HOME}	POS1-Key
{_END}	END-Key
{_UP}	UP-Key
{_DN}	DOWN-Key
{_LEFT}	LEFT-Key
{_RIGHT}	RIGHT-Key
{_PGUP}	PGUP-Key
{_PGDN}	PGDOWN-Key
{_INS}	INS-Key
{_DEL}	DEL-Key
{_S_DN}	SHIFT-Key pressed
{_S_UP}	SHIFT-Key released
{_C_DN}	CTRL-Key pressed

{\_C\_UP} CTRL-Key released  
{\_A\_DN} ALT-Key pressed  
{\_A\_UP} ALT-Key pressed

## Time controlling Sun (Extra3)

Hereby, one can steer programs in dependence on sunrise - as well as. -sunset. It is added the minutes of Offset in the morning and is withdrawn in the evening. The program is started in sunrise and if it still started in sunset, since finishes again.

**Peculiarity: This function is also executed if recording not started!**

**To heed!** If the program (Wswin) is started, if a point in time already was passed, the corresponding function is not made up!

### BAT-/CMD-program:

Generally also Batch and CMD-Programs are supported.

A window title at "Time Controlling Sun (Extra3)" **doesn't** bring anything in this case!

### Important!

If the program meets a ".bat" or ".cmd" file for the executions, when starting the transfer-parameters are passed and when finishing not.

Working with a script - example:

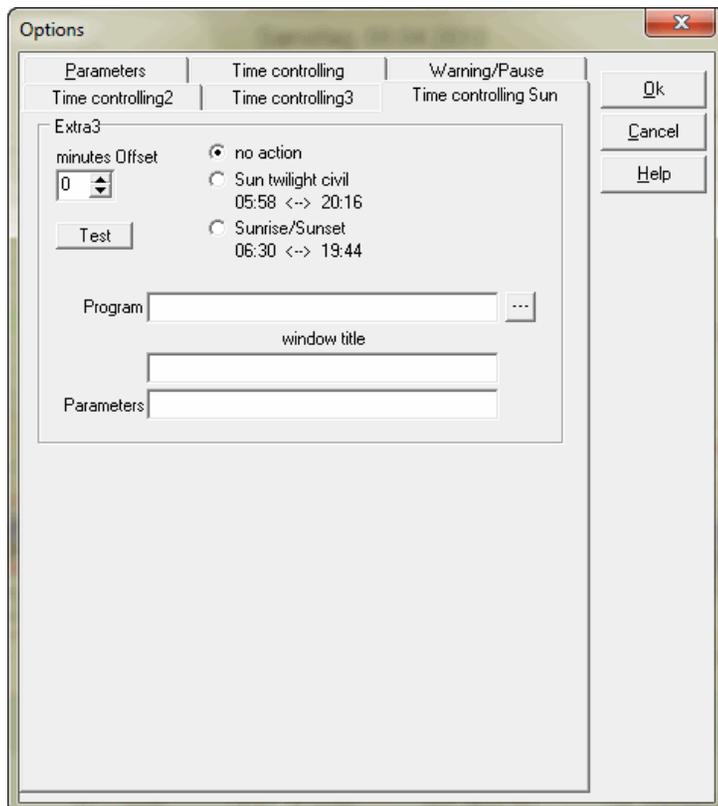
```
if "%1"==" " goto Finish  
... here code at starting
```

```
goto ENDALL
```

```
:Finish
```

```
... here code at finishing
```

```
:ENDALL
```



## Warning

### - at not started recording

Who is forgetful and did not start the recording, can let warn himself with this option !  
After the calm time (in minutes) the selected warning occurs.

### -at missing data

in case of „File watching“ and not arrival of new data within the calm time also a corresponding "speech warning" and/or Sound warning can be caused.

Commitment: for example if the "checked file" is on a network system and this disk drive "disappears" (for example because this computer was restarted).

### - File watching: Stop/Start

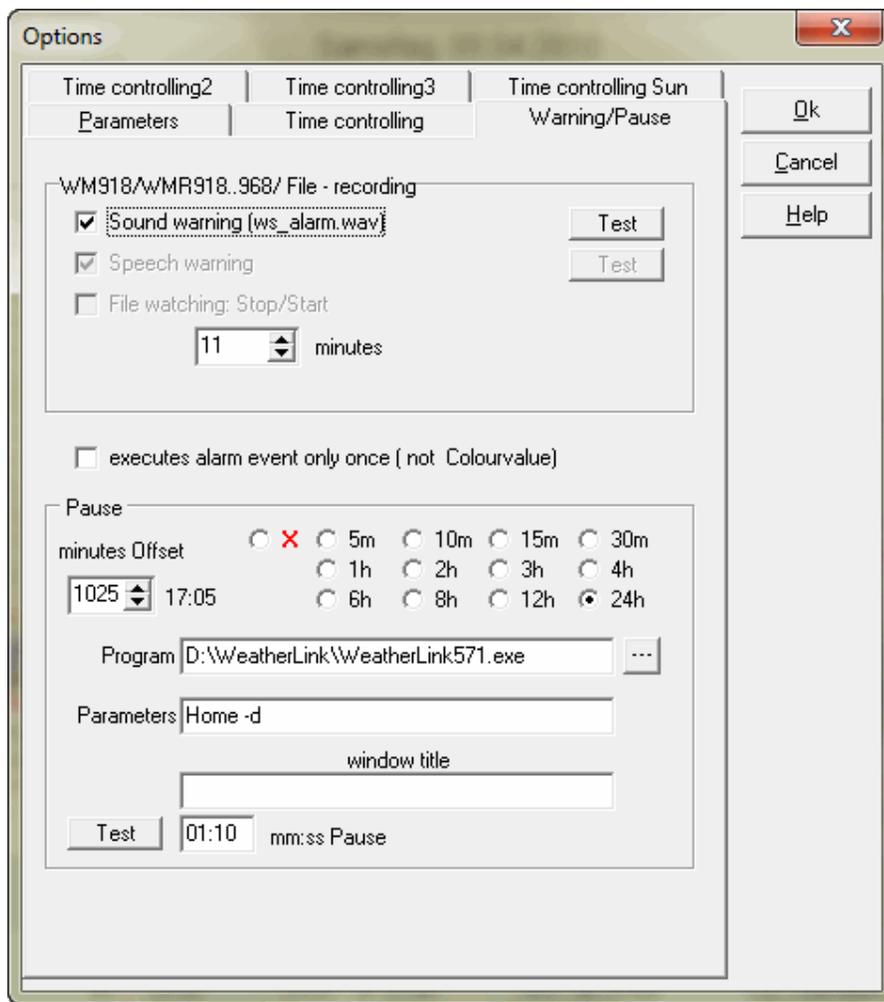
in case of „File watching“ and not arrival of new data within the calm time the recording will be stopped and then started again.

Option:

### Executes alarm event only once

At activated alarms, the "reaction" is executed with it only once.

Default is, that the alarm as long as against-gets becomes, until the alarm event no more existing.



## Pause/Waiting Operation

From V2.85.0, also a "passive operation" or also called Pause operation is supported.

The difference to the normal operating mode = recording, exists, that the program becomes "active" only in the here put in interval and picks up data on that occasion, while constantly at the "active operation", the program accordingly the record interval's the interfaces polls.

This operating mode **is not suitable for the WM918, WMR9x8-stations**, only for **weather station types** with data logger (WS2000, WS2500, VantagePro) and in the operating mode „File-Watching“. If you have problems with the active file watching, you should energize the Pause **operating mode** here by way of experiment.

## Pause operation:

**Energize:** as soon as you here a time between 5min... 24hrs choose - „x = deactivates - and quit after that this window with OK, the pause operating mode is started.

At **mm:ss Pause** must set on **00:00** in this case

The prepared time controlled function works like until now.

**Minutes Offset** If you want to **postpone** the execution around certain minutes, so you input this correspondingly. The maximum value depends in this case on the chosen **range-time**. For example at 5 minutes are possible for 4 minutes, at 1hrs are possible for 59 minutes and so forth.

### Application:

- 1) If you use a WS2000 or WS2500 interface, put the shortest range time minutes from 3 (2), would like, however, because of that accumulating receive breakdowns during the interface query, to let the query be executed, in larger time intervals.
- 2) The acting **file watching** does not function (for example under Win95).
- 3) you use a VantagePro weather-station and would like to use the Weatherlink software simultaneously.

## This function is also possible if File-Watching is activated.

## Waiting operation:

**mm:ss Pause:** If you use a value unequally here in 00:00 and use a time additionally above, the program is used in the Waiting operation.

**Program:** You can let start a „program“ simultaneously in the case of absorption of the delay operation.

**Settings:** If the program requires arguments/settings during the start, you can give that one here so.

**Window title:** If the program is supposed to be closed after the set time (**mm:ss Pause**) automatically again, you input its **window title** here so. Wswin searches this window/program then and attempts to terminate before it resumes his normal operation.

### Application:

1) You use a WS2000 or WS2500 interface, however want at 2 o'clock as well at 3 o'clock, don't execute any accesses to the interface, if the interface itself try to synchronize with the DCF-time, because this disturb the DCF-reception with it.

**Setting example:** Time 24h, Offset minutes,: 118, mm:ss pause,: 15:00. in this case, the program goes at 01:58 in the Waiting operation, waits 15 minutes, and resumes at 02:13 the normal operation.

2) Starting of the Weatherlink-software, so that this software can process also the data.

**Here in the Hardcopy Weatherlink56 is started at 17:02 o'clock and one minute later WsWin continues the recording.**

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## Choose language ...

With this menu item you can change the program language.  
The change to the chosen language is effective immediately.

The already displayed "status response texts", as for example "Wireless interface found" are not translated afterwards anymore.

Since the names for the sensors are user-defined (both short names and description), these texts are not translated either and should be adapted in "File" - "Properties".

Another possibility to carry out the language choice in the program exists, close the program and then delete the "**wswin.cfg**" - file in the program folder. After re-starting the program, the sensor name/-units are initialized in the corresponding language of the country.

It is further possible, with help of two configuration files, to work simultaneously with two language

The programming language can be chosen also with "**command line options**".

### **Date, time display:**

The display for date and time is taken from the Windows **system control**.

To express it differently: anyone who chooses country setting "English (USA)" on a German Windows-system in the system control receives English texts and the American format for date and time for the date-texts.

Exception:

For specific time displays the space for the American time format

**AM** hh:mm is not sufficient, then the **24h- time representation** is chosen here automatically.

### **Support for other languages:**

If you want to use this program also in your mother-tongue - no problem -

**Procedure:** simply get in touch with me, I will send you the corresponding resource file for the compiling to the desired language of the country.

## **Difference between supported languages:**

The only difference between languages is the file "**wswin.set**".

In this configuration file the entry:

[Settings]

**Language=1** -> is responsible for the selected language.

If there is a help file for that language, this language help file has in the file name appended the contraction for these languages.

**Example for English:** wswin32.hlp becomes wswin32en.hlp.

If there is no **wswin32en.hlp** (or other languages help file) available, the **HELP-File** is defaulted to **wswin32.hlp**

## **Initiate sensor texts again**

So that has one the possibility to readjust also the sensor texts on the again chosen language in case of alternation of the "programming language".



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# Adjustments View

## Show sunrise/sunset symbol in day diagram

With that the sunrise and/or sunset in the day diagram with a symbol is represented.

At "show time" besides at the left outer side the day length is shown and before the symbols the time of the sunrise and/or sunset



## Show Full-/Newmoon in the day diagram

With that, the full moon and/or new moon in the day-/week-/month-diagram with a symbol is represented.

## Day: show always Lines

If the day-view are data-gaps bigger 2 hours or only measurements are bigger 2 hours in stock, the program doesn't draw any more a diagram-line.

With this option, you force the program to nevertheless draw the lines!

## Show at wind <0> no wind direction lines in diagram

Who would like, that at no wind no wind direction lines are represented, this option should choose

## Show at wind direction DOTS (instead of line)

Who would like in the day representation (**and only here**) instead of the chosen line-kind for the wind direction, let represent Individual points.

- ✓ With that performs the diagram much more tidiedly.
- ✓ At the other representations (Week,Month,Year) the points would peter out, therefore here not, in addition the dominating direction is represented there only.

## Show Barometer graphic diagram line colored

**1013.2 hPa (29.918 inHg)**

The reference line of the standard measure air pressure is announced in the diagram.

### Average value

The mean value of the air pressure of the shown representation period in the diagram is drawn.

The kind of this line is **stroke lined** always and the color is the calm color of the air pressure.

## Show Weather forecast Icon (->Displaybar)

If you switched on the display bar and the program window has at least a

**Width of 800 pixels**, you can let inserted a small weather forecast graphics in the display bar.

Under Weathers, Weather forecast you can pretend own graphics (also animated), if you don't pretend any own graphics or if there are problems at the "store" of „your“ graphics, then the "default" - graphics is used.



## VantagePro (Weatherlink) Weather forecast showing in program head line

At this station you can let inserted in the program header the long forecast text.

This ad runs along also with the "cursor position", i.e. you can interrogate this piece of information for every time later later!

 **Mostly cloudy and cooler. Precipitation possible within 12 hrs., possibly heavy at times. Windy.**

## Day-average calculation (month/year)

#### **4 values (7, 14, 2x21)**

The Values are computed to the international guidelines.

#### **All values**

All available values of a day are used for the calculation.

*Consider!* With choice of these options, the calculation lasts longer.

#### **Calculate distribution wind direction <-> 0 km/h | m/s | mph**

Whoever would like to necessarily (for example with defective wind speedometer), calculate also the wind directional distribution with wind speed of **0 km per hour**, can the recording hereby only from **1.07 km per hour = 0,3 m/s** "overcharges".

#### **Wind Run -> Wind gust**

The Wind-Run is normally calculated from the wind speed. If you transfer the data from another weather-station (for example. WS2500), which hold the wind always as wind gust and there now get to low wind run values.

With this option, you can set to use for wind run calculation the **wind gusts**.

#### **Beaufort -> DWD (!WMO)**

Beaufort-values after **DeutscherWetterDienst** (not **WourldMeteorologyOrganization**).

#### **Not active: „Available from:“**

If you have set at Sensor Properties for certain sensors a date for. „Available from“, its data then are shown no more in the diagram before this date.

Sometimes, it is necessarily to be seen also these data without wanting to alter this value. You can do this with this option.

#### **Program <-> 24h display**

If Synop or a variable necessarily require the 24h display, although chosen normal day-view, this is rearranged with this option obligatorily.

#### **Solar <-> alternate calculation**

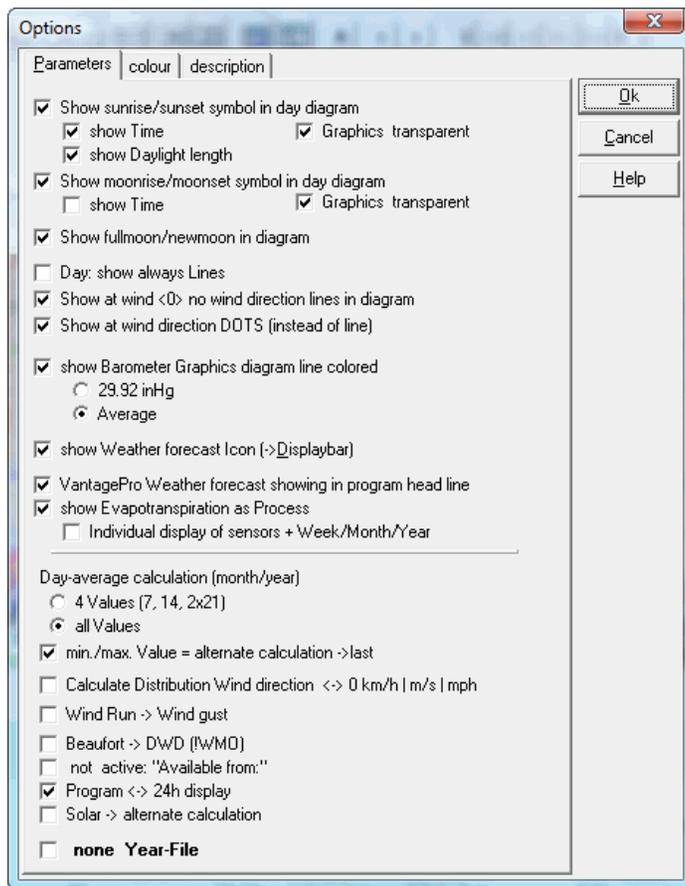
For the average calculation the program uses default-wise only data higher 0.

With activation of this option all data form the period are used for averaging of this value > smaller values.

#### **none Year-File**

Who doesn't want to use the yearly data files (for example because of frequent parameter changes), this option should activate.

Existing yearly data files are not deleted automatically on that occasion, however, one can delete it by hand. They are not updated by the program more automatically. When variables on that refer, they are used (whether content is right or not ...).



### Background color / Font color for Graphics / Displaybar / Min-/Max bar

Who is not satisfied with the white diagram background and/or the black type color in the diagram, can there choose a color, for more pleasant, with that.

### Scaling -> sensor lines colour

The labeling of the Y-axis is executed in the same color as its Sensor line color.

It becomes always the color of the 1. chosen sensor type (for example temperature, humidity etc.) on that occasion uses (accordingly like also with the scaling setting).

### Legend -> sensor lines colour

The labeling of the legend (sensor short name) is executed in the same color as the appropriate Y- scaling color is.

If [scaling-coloring](#) is not chosen, this option is ignored.

### Colour for Cursor in Diagram

Here you can choose a color for the cursor - provided that, this is outside of the final positions -.

Default color: RED

### Show 0°C/32°F Diagram line colored

Who would like to mark the ice point line particularly, should this option choose.

Consider ! If you choose „**thick**“ additional – than this line can not be represented with dashes (system-dependent) - it will be drawn as full line.

### Show month-/year temperature-average line

When you would like to show in the diagram this average line, you should activate this option.

In the representation "**Year**" the "year average" is shown - else the month average to the corresponding "representation period".

The representation occurs only, if the temperature level is in the range to be shown This Option controls also the edition in the month-/year tables.

**This option steers also the display in the month-/yearly tables and in the min./max. bar for the sensor with the ID=2 as well as the dew point sensor.**

The option can be activated only, when under "Weather" „Statistic dates“ "Parameters" the Normal long-standing average temperature values were entered.

### Show of month-/year rain norm line

If you might have shown the norm rain quantity line in the month as well as year diagram, you activate this option. This representation takes place only (despite activation):

- it must be for standard yearly rain quantity one registered
- in rain, auto scaling must be activated
- the representation of the rain quantity as "process" must be activated
- the rain can be represented only as "single" sensor
- the view time period must be month or year.

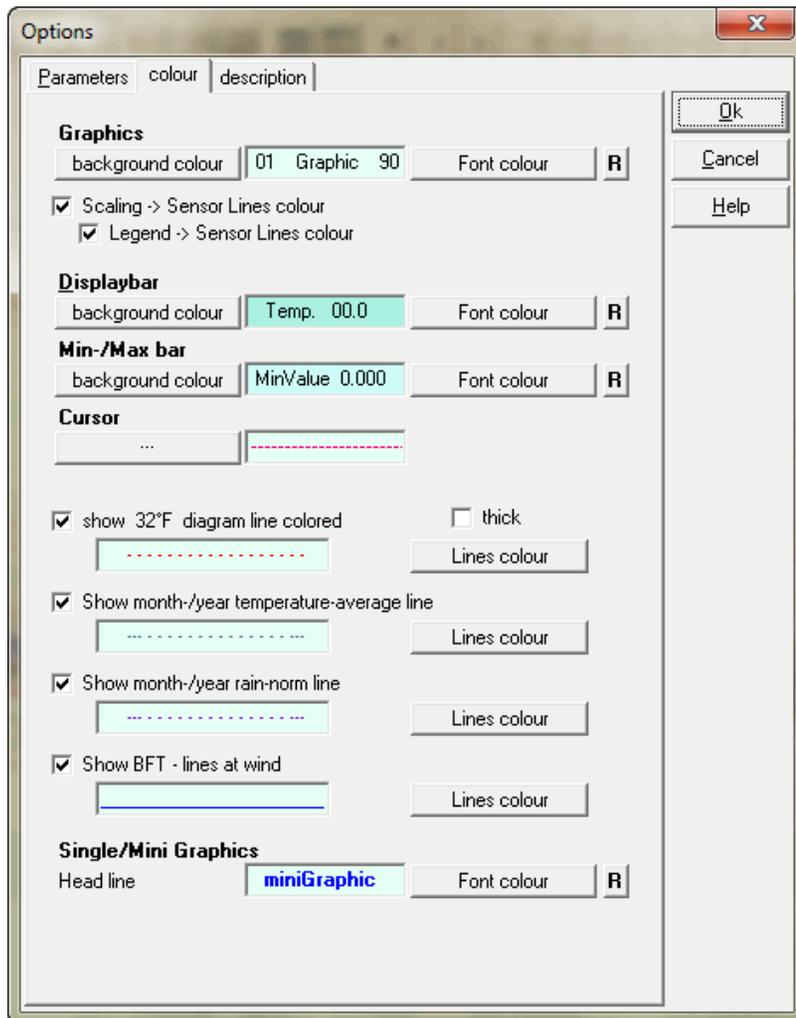
The option can only be activated if under "Weather", "Statistics dates", "Parameters" a yearly rain value existing and is picked "auto scaling" for the rain.

### Show BFT- lines at wind

With activation of this option **and "single view"** of the wind speed / wind gusts is represented additionally the Beaufort lines.

### Single-/Mini Graphics – Head line

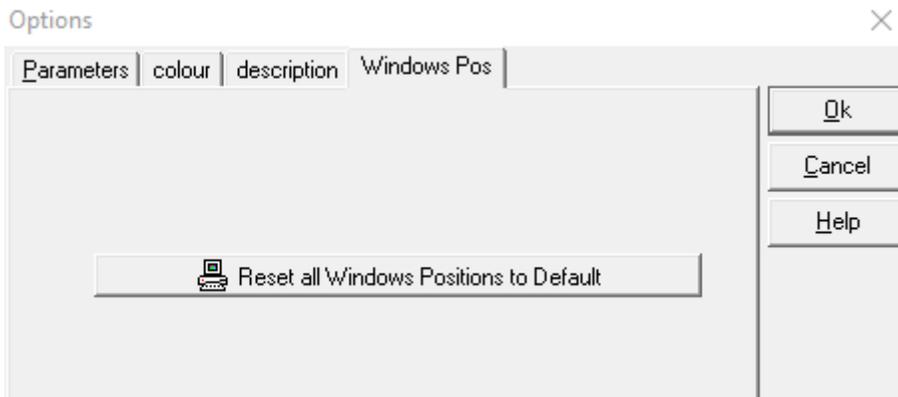
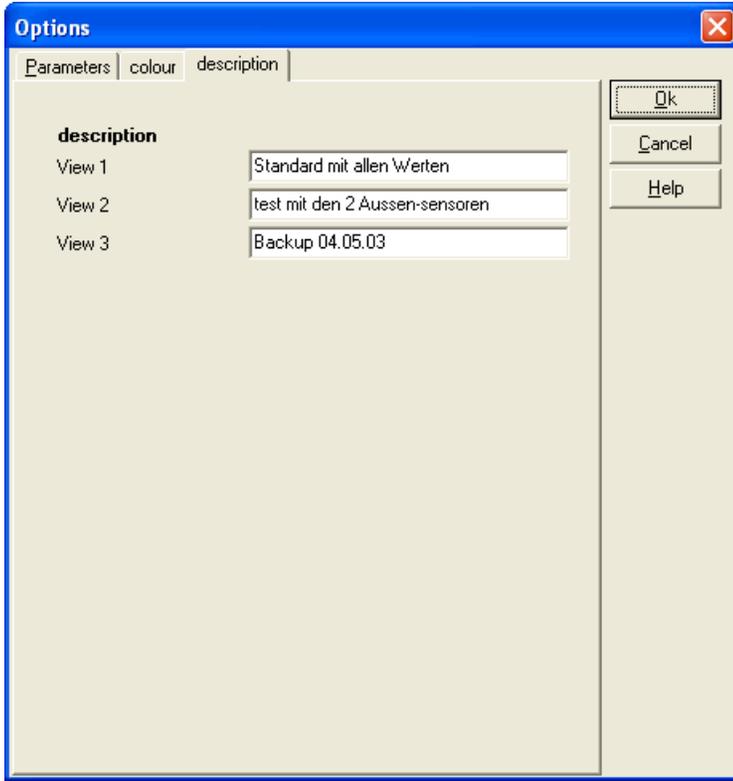
Possibility, to make an independent color-selection for the header.



## description

View1, View2, View3:

Here you can set aside a **description** for the 3 possible "**display-profiles**".



If you suddenly no longer have a second monitor, but certain displays have been set or displayed on this monitor, you can use this to bring all windows back to the main monitor.

[Functions](#)

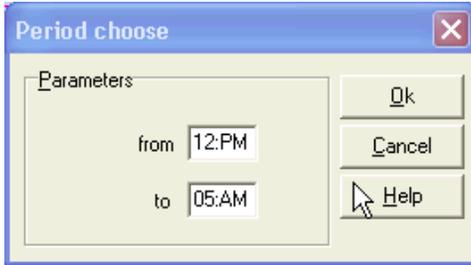
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# Choose period

Depending on the selected View the period, the day, the calendar week, the month or the year can be chosen with this function. The current settings are displayed always in the status bar.

## From/to Time

These input fields establishes the period for the representation within a day, for example from 07:00 o'clock to 15:00 o'clock.

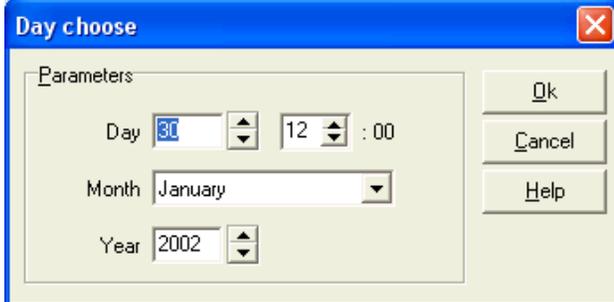


## Day

This field allows the selection of the day within a month.

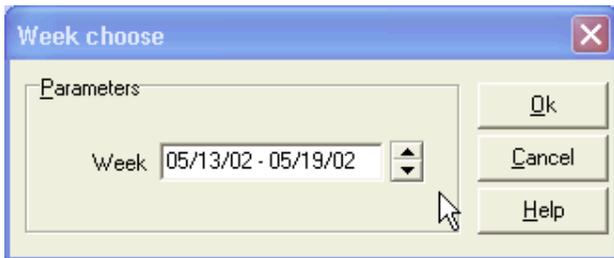
A change between **Normal display** (preselected day) and **24h- display** (day overall) is possible.

If there was the 24h-display chosen, one can in addition select the last, to be represented hour (only in offline mode)



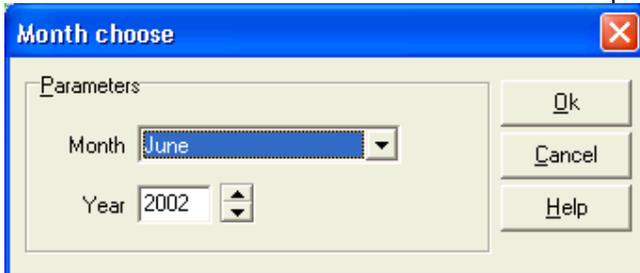
## Week

For the representation of the data of an entire week the desired calendar week can be selected with this field, where the display starts in each case with Monday and ends with Sunday.



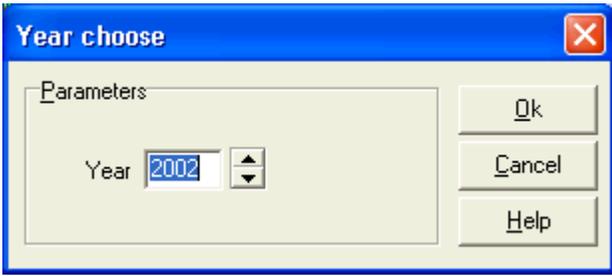
## Month

This list allows the selection of the month for the display "Period", "Day" and "Month".



## Year

With this field for the respective display of the desired year can be chosen.



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# Diagram display

The graphic editing of the weather data can be done for different periods. By means of this, both long-term weather evolutions can be observed as well as detailed considerations of individual days carried out.

The display is possible for a period within a day, for example from 12:00 o'clock until 14:00 o'clock, for an entire day, a calendar week, a month or an entire year.

In the display "**Time**" and "**Day**" all measured values available in this period are displayed on the screen.

In the display "**Day**" you have the options:

- Normal display:** Here the display always begins at 00:00 o'clock - all shown values refer to the set day !
- 24h display:** The data of the current hour and in addition the data of the last 23 hours are displayed. Display always begins at the full hour. All shown values (min-/max-/average) refer to the displayed period.

With the **week representation** an average value is formed on the individual days for every hour.

The representation "**Month**" supplies an average value for every day. The calculation is done with the measured values at internationally determined dates (07:30, 14:30, 21:30 ) and the value measured last enters the calculation twice. If there is no measured value up to this date/time, the value measured next is used then for the calculation. In the **year display** the day - averages of all months are determined and displayed.

For the week, month and year display you can additionally display with the Individual display of sensors the Minimum- and to maximum values of the chosen sensor (not for rain, wind direction).

In the chosen display (period, day, week, month, year) you can switch to the preceding and/or subsequent periods page with the LEFT and/or RIGHT button.

If in Choose comparision the display of arrangement process was turned on, then these data are read in additionally.

The input of the weather data can be interrupted prematurely by pressing the button "**Esc**" or with a mouse click with the **right mouse button** in the information window after a security query.

The selection of the measured item whose process is supposed to be displayed is done at Choose measured items in the menu "view".

The diagram may be labelled several times depending on the chosen measured items labels so that all measured items can be displayed simultaneously.

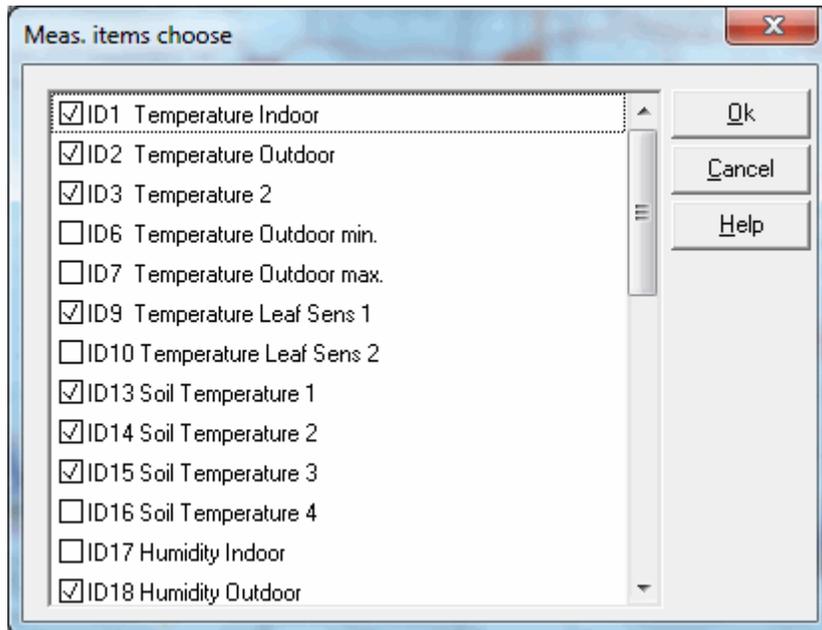
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# Choose measured items

The recorded weather data can be displayed in a diagram as a curvature. In order to do this, this function allows the selection of the desired measured items. Every measured item can in this case be switched on or of by a double-click or by activating of the space bar on the respective entry. The diagram contains then a corresponding scaling for every measured item.

## Hint:

The function Available sensors in the menu "wireless interface" allows the selection of the measured items which are registered by the Weather Station in fact. Their number depends on the kind and the extent of used Sensors. Only the measured items which were chosen with this function are considered at the selection and the processing of weather data.



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# Rain display

## **as Process**

The rain amount display is shown as a diagram line.

## **as Column**

The rain amount display is shown as a column.

In this case, the line width is increased one tier.

In case of representation of comparative values, only the process is represented in a system-dependent way.

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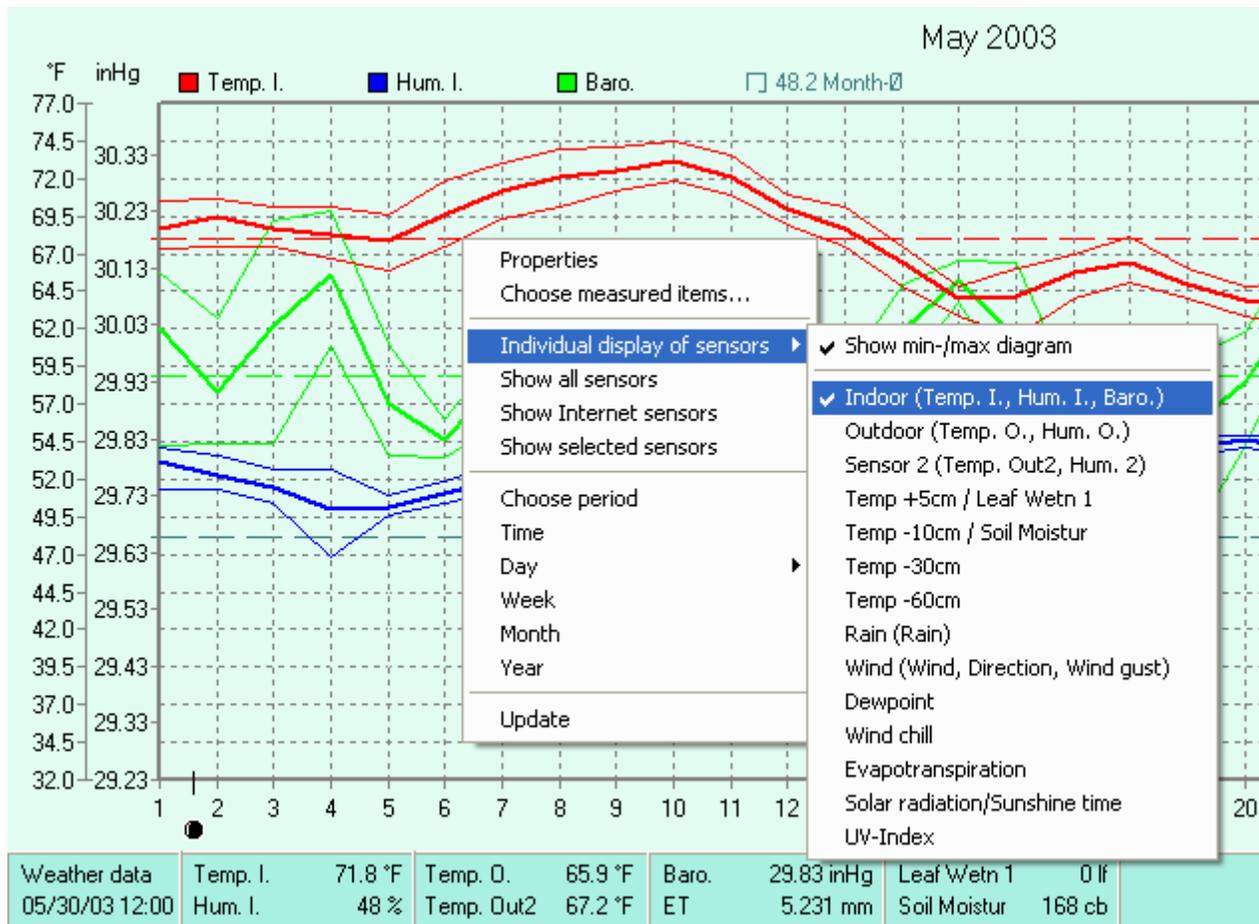
# Individual display of sensors

With this function only **one** optional sensor can be displayed at a time with the corresponding measured values, for example temperature or humidity as well as air pressure when using a sensor with pressure sensor. The qualities of the relevant measured values (colour, scale-min-max-value and so on) are taken into consideration in this case.

In the week, month and year display you can in addition display the minimum- and maximum values of the chosen sensor (not for rain, wind direction).

Only Available sensors are offered.

You can switch back to the normal display with Show selected sensors.



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# Show all sensors

This function changes to the diagram display of all available sensors.

An individual selection of all the displays is therefore not necessary!

Switching back to the normal display of the preferred sensors can be done with **Show selected sensors**.

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# Show Internet sensors

This function changes to diagram display for the sensors chosen in menu Internet adjustments-> „# Graphics“.  
The same display is also used for the Internet graphics – you can thus check the display here and correct it if necessary.

If the option **”Adapt Html-Graphic”** under **”Internet-Properties”**, **”Graphic”** was chosen, then the window changes to the defaulted graphics size

Switching back to the normal display of the preferred sensors is done with Show selected sensors.

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# Show selected sensors

With this function you can switch back to the display of measured items chosen before = several measured values, or also all measured values.

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# Table

For the more precise examination of the recorded weather data this function allows a tabular listing of the individual measured values for the chosen period. On the other hand the graphic representation in the diagram clarifies the fundamental course of a measurement item.

For the rain values one has the option of the display as an absolute value and/or as difference value between two measuring times.

Up to 8 measured values are printed in the portrait mode, 9 measured values and more in the landscape mode (Horizontal format).

When printing the table only measured values which fit onto a sheet in the horizontal format are printed.

**Solution for complete printing:** print export file in a spreadsheet.

The table contains only the measured items which were selected in menu Choose measured items.

Time	Temp. 1	Temp. 2	Temp. 3	Hum. 1	Hum. 2	Hum. 3	Baro.	Rain	Wind	Direction	Sunshine	Dew point
11:55 PM	66.9 °F	61.2 °F	60.6 °F	47 %	53 %	51 %	29.68 inHg	0.000 in	7.6 mph	40 °	0.00 min	43.9 °F
11:50 PM	66.9 °F	60.6 °F	60.8 °F	47 %	54 %	52 %	29.68 inHg	0.000 in	7.8 mph	40 °	0.00 min	43.9 °F
11:45 PM	66.9 °F	60.6 °F	60.8 °F	47 %	57 %	52 %	29.68 inHg	0.000 in	8.1 mph	40 °	0.00 min	45.3 °F
11:40 PM	66.9 °F	60.6 °F	59.7 °F	47 %	57 %	56 %	29.68 inHg	0.000 in	6.8 mph	40 °	0.00 min	45.3 °F
11:35 PM	66.9 °F	60.4 °F	60.8 °F	47 %	57 %	55 %	29.68 inHg	0.000 in	6.3 mph	35 °	0.00 min	45.1 °F
11:30 PM	66.9 °F	60.3 °F	59.5 °F	47 %	57 %	56 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	45.0 °F
11:25 PM	66.9 °F	60.3 °F	59.5 °F	47 %	58 %	56 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	45.4 °F
11:20 PM	66.9 °F	60.1 °F	59.5 °F	47 %	58 %	56 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	45.3 °F
11:15 PM	66.9 °F	60.1 °F	61.0 °F	47 %	58 %	56 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	45.3 °F
11:10 PM	67.1 °F	60.1 °F	61.0 °F	47 %	58 %	56 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	45.3 °F
11:05 PM	67.1 °F	59.7 °F	58.3 °F	47 %	57 %	59 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	44.5 °F
11:00 PM	67.1 °F	59.9 °F	58.6 °F	47 %	56 %	57 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	44.2 °F
10:55 PM	67.1 °F	59.9 °F	59.5 °F	47 %	55 %	54 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	43.7 °F
10:50 PM	67.1 °F	60.1 °F	59.5 °F	47 %	54 %	54 %	29.68 inHg	0.000 in	0.0 mph	360 °	0.00 min	43.4 °F
10:45 PM	67.1 °F	59.9 °F	59.2 °F	47 %	53 %	54 %	29.68 inHg	0.000 in	7.9 mph	35 °	0.00 min	42.7 °F
10:40 PM	67.1 °F	59.9 °F	59.2 °F	47 %	52 %	54 %	29.68 inHg	0.000 in	6.3 mph	35 °	0.00 min	42.2 °F
10:35 PM	67.1 °F	59.9 °F	58.3 °F	47 %	52 %	52 %	29.68 inHg	0.000 in	7.8 mph	35 °	0.00 min	42.2 °F
10:30 PM	67.1 °F	60.1 °F	58.6 °F	47 %	50 %	50 %	29.68 inHg	0.000 in	6.7 mph	35 °	0.00 min	41.4 °F
10:25 PM	67.3 °F	60.3 °F	59.0 °F	47 %	49 %	49 %	29.68 inHg	0.000 in	7.2 mph	35 °	0.00 min	41.0 °F
10:20 PM	67.3 °F	60.3 °F	58.5 °F	47 %	50 %	51 %	29.68 inHg	0.000 in	7.8 mph	35 °	0.00 min	41.6 °F
10:15 PM	67.3 °F	60.4 °F	59.5 °F	47 %	50 %	48 %	29.68 inHg	0.000 in	6.6 mph	40 °	0.00 min	41.7 °F
10:10 PM	67.3 °F	60.8 °F	59.5 °F	47 %	50 %	48 %	29.68 inHg	0.000 in	5.3 mph	30 °	0.00 min	42.1 °F

## Current Values

If you want to see the current values at a glance (or to print out) so click at activated **display bar** to the left outside under „**Weather data**“ onto the time value.

An automatic updating for that is not planned!

As soon as a new data record is stored, the program closes this advertisement from itself!

If you use this indication, and the recording is not active, so the expected data are possibly not shown. Click time/date field (here 11:55 PM 03/20/2004). the data then are represented in accordance with the indicated Diagrames.

-> if you would like to update data later, for example, and the matching current-values require to it!

**Current Values** [min] [max] [close]

11:55 PM 03/20/2004

Meas. item	Value
Temperature Indoor	71.2 °F
Temperature Outdoor	47.7 °F
Temperature Outdoor min.	47.5 °F
Temperature Outdoor max.	47.7 °F
Temperature Soil (+10cm)	46.9 °F
Precipitation detection	144.0 °F
Soil Temperature (+10cm) Sun	42.1 °F
Soil Temperature (-10cm)	39.9 °F
Soil Temperature (-30cm)	39.0 °F
Soil Temperature (-60cm)	45.0 °F
Humidity Indoor	41 %
Humidity Outdoor	78 %
Leaf Wetness 1	0 lf
Moisture 1	190 cb
Barometer	29.75 inHg
Rain quantity	0.000 mm
Wind speed	5.0 mph
Wind direction	155 °
Sunshine time	0 min
Precipitation Time	0 min
Evapotranspiration	0.001 in
UV-Index	0.0 UV-I
Solar radiation	0 W/m²
Dewpoint	41.1 °F
Wind chill	45.5 °F

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# Minimum and maximum values

For the before chosen Period the extreme values can be determined with this function. The table contains in this case the respective minimum and maximum value for every measured item with the date and the time.

For the periods **week, month and year** you can choose between the **computed average values** and the **actual Min. /Max values**. (only valid for this Window).

The average is the average value of all data available in the chosen period.

A leading one "#" with a value, reminds on a "sum" (not average)

The finally shown values for Evapotranspiration and wind course are only passed out, if under Statistics data, that calculation will activate for it.

## Hint:

The list of the minimum and maximum values contains only the measured items which where chosen in menu "Wireless interface" with function Available sensors.

Minimum- and maximum values

Friday / Saturday, 05/24/2003

Meas. item	Minimum	Time	Date	Maximum	Time	Date	Average
Temperature Indoor	64.8 °F	05:15 AM	05/24/03	68.9 °F	05:50 PM	05/24/03	66.69 °F
Temperature Outdoor	46.2 °F	05:30 AM	05/24/03	73.6 °F	02:05 PM	05/24/03	60.36 °F
Temperature Outdoor 2	46.9 °F	03:30 AM	05/24/03	75.9 °F	02:35 PM	05/24/03	61.48 °F
Temperature +5cm	46.0 °F	04:20 AM	05/24/03	84.0 °F	02:05 PM	05/24/03	63.50 °F
Temperature -10cm	52.0 °F	06:25 AM	05/24/03	68.0 °F	03:00 PM	05/24/03	59.03 °F
Temperature -30cm	54.0 °F	09:00 PM	05/23/03	55.9 °F	05:35 PM	05/24/03	54.50 °F
Temperature -60cm	54.0 °F	09:00 PM	05/23/03	54.0 °F	09:00 PM	05/23/03	53.96 °F
Humidity Indoor	48 %	08:35 AM	05/24/03	52 %	12:05 AM	05/24/03	50 %
Humidity Outdoor	30 %	03:10 PM	05/24/03	91 %	11:25 PM	05/23/03	63 %
Humidity 2	0 %	09:00 PM	05/23/03	0 %	09:00 PM	05/23/03	0 %
Leaf Wetness 1	0 lf	09:00 PM	05/23/03	0 lf	09:00 PM	05/23/03	0 lf
Moisture 1	23 cb	10:25 AM	05/24/03	140 cb	08:55 PM	05/24/03	56 cb
Barometer	29.61 inHg	08:15 PM	05/24/03	29.94 inHg	09:15 PM	05/23/03	29.78 inHg
Rain quantity				0.0 l/m²	09:00 PM	05/23/03	#0.000 l/m²
Wind speed	0.0 km/h	08:00 AM	05/24/03	16.1 km/h	08:40 PM	05/24/03	8.0 km/h
Wind direction				NE			N
Sunshine time				5.00 min	06:50 AM	05/24/03	#13:20 h
Rain duration				0.00 min	09:00 PM	05/23/03	#0 min.
Evapotranspiration				0.584 mm	01:00 PM	05/24/03	#5.358 mm
UV-Index	0.0 UV-I	09:00 PM	05/23/03	7.7 UV-I	12:40 PM	05/24/03	4.0 UV-I
Solar radiation	0 W/m²	09:00 PM	05/23/03	926 W/m²	01:25 PM	05/24/03	495 W/m²
Dewpoint	39.5 °F	03:10 PM	05/24/03	53.1 °F	10:45 AM	05/24/03	45.6 °F
Wind chill	39.3 °F	04:50 AM	05/24/03	73.6 °F	02:05 PM	05/24/03	58.4 °F
Wind gust	1.0 mph	08:20 AM	05/24/03	20.0 mph	03:30 PM	05/24/03	9.3 mph
Wind direction Wind gust				S			N
ISS Reception	85.96 %	11:50 PM	05/23/03	100.00 %	04:40 AM	05/24/03	93.40 %
Evapotranspiration							4.354 l/m²
Wind Run							191.7 km

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# Display

During **the recording of the weather data** the measured values can be displayed also in a window that is similar to the display of the Weather Station at the same time as the graphic representation in the diagram. By choosing this function the display window is turned on or off.

If **not** in recording mode, the Display may be show **wrong dates** !

**The former restriction, to be able to activate the Display only in the "recording mode" was removed - with that there is the possibility now to configure the Display better.**

The features of the window can be modified by activating the right mouse button within the display. For the display of the sensor (right sensor display) every available sensor can be chosen.

The settings of the window are saved automatically so that the window is displayed with the same qualities again at the at last chosen position when calling it again.

If with Alarm values, the reaction "Display value in colour" was chosen, the values will be displayed in colour when reaching the set alarm values.

Instead of the **humidity** also the **dew point** of the chosen sensor can be announced.

With the Weather Stations **WM-918/WMR-918/968** in addition to the values displayed here also the **Windgust** and permanently the **Windchill** temperature are displayed.

In the lower line the time and the date of the reception date are shown (ELV wireless interface) - for the Weather Station WM-918/WMR-918/968 the last reception time is announced.



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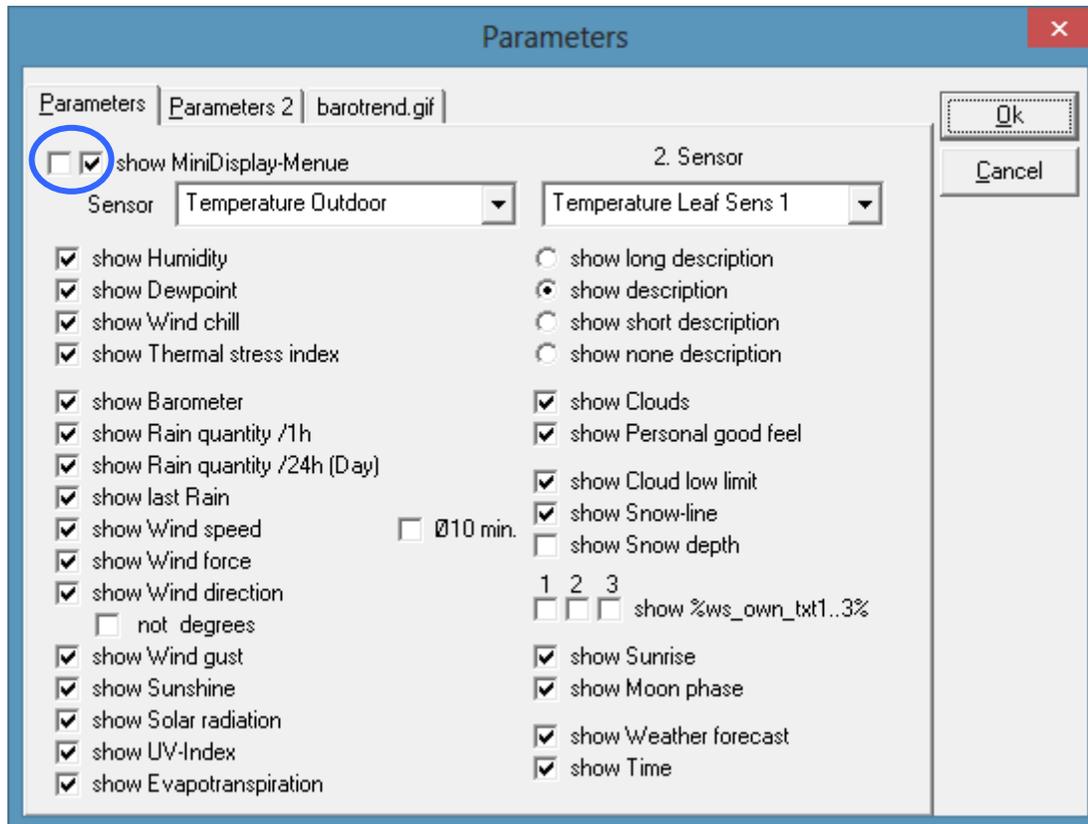
# Mini-Display

During the recording of the weather data the measured values can be displayed also besides to the Display on this Mini-Display. By choosing this function the mini-display window is turned on or off.

If **not** in recording mode, the Mini-Display may be show **wrong dates** !

**The former restriction, to be able to activate the Mini-Display only in the "recording mode" was removed - with that there is the possibility now to configure the Mini-Display better.**

The features of the window can be modified by activating the right mouse button within the mini-display. For the display of the sensor every available temperature sensor can be chosen.



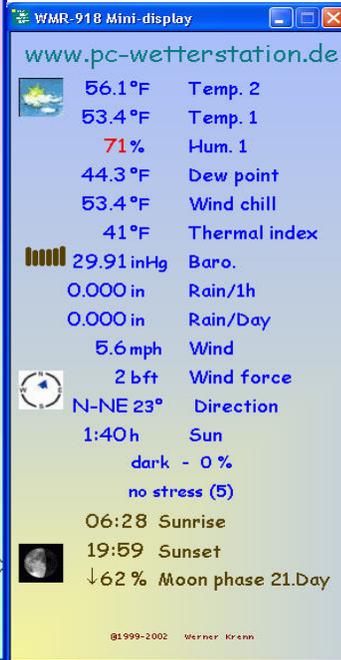
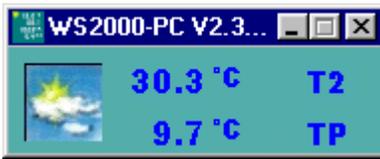
With the left most Check-Box near "show MiniDisplay-Menue" you can energize the completely compulsory foreground representation of the Minidisplay.

The font size can be changed in a range of **8 to 24 pt** - from that and from the font typ the **minidisplay size** results. When, through the chosen character size, the minidisplay suits not more onto the monitor, the character size is reduced automatically until everything fits again onto the monitor ! (representation-moderate - not position-moderate)

The settings of the window are saved automatically so that the window is displayed with the same qualities again at the at last chosen position when calling it again.

If with Alarm values, the reaction "Display value in colour" was chosen, the values will be displayed in colour when reaching the set alarm values.

Here different views:



Consider!

If the necessary place is not sufficed for the representation of the air pressure bar graph and/or the wind direction the display is faded out automatically.

If you absolutely want the representation, you have to choose a bigger font size and/or more value to display.

### Representation:

All shows values refer to the last displayed/received value of the diagram. For not available sensors is " - - " show

### Menu:

If you disable the menu, you can **not change** the position of the windows anymore. For modifying, turn the menu again on.

### Weather forecast:

The weather forecast graphics are shown always. With this option you can choose the text output (besides time indication necessary)

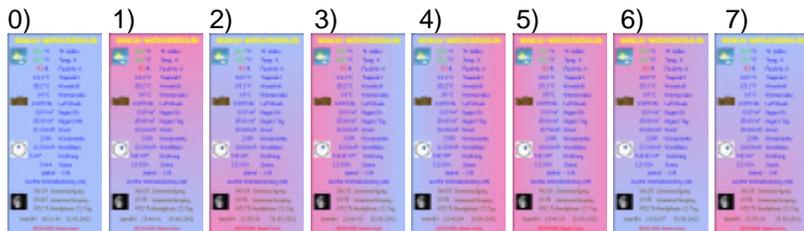
### Air pressure bar graph:

The solution conducts +/-10hPa and sets up the dates (of to the left of beginning ):

-24 H, -12 H, -6 H, -3 H, -2 H, -1 H, Current Value -> the current value is announced always as zero position.

### Dew point:





### Option + xx Pixel

Planned for width correction at short/long texts

Range from **-10 ... 30**

## Caution !

**If with the made graphics "wrong colors" occur, it can be necessary, to find another color choice or set gradient to "None"!**

### Option for Computer with only 256-color-graphicscard:

In the file Wswin.cfg in Capter

[MiniDisplay]

add this entry (willn't be automatical created!!)

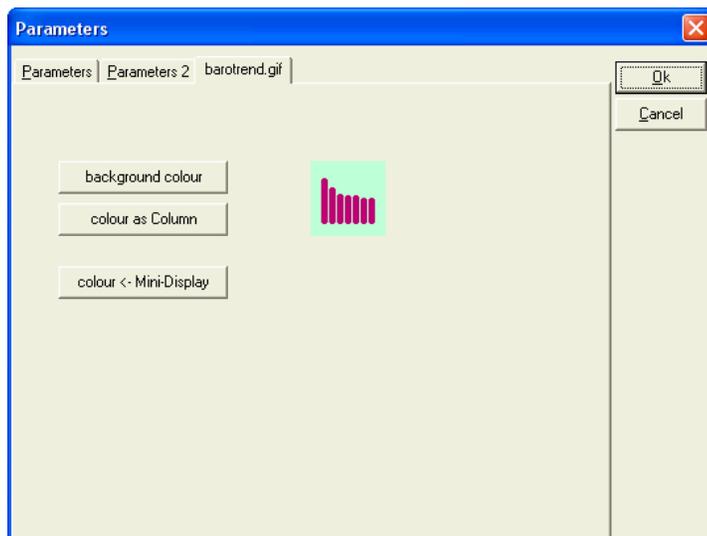
MiniDispGifArt=1 -> Default or rather if no entry available

Available Values:

- 1: Reduce to optimal 256 color windows palette
- 2: Do not perform color reduction
- 3: Reduce to optimal 2^n color palette
- 4: Reduce to the Windows 20 color system palette
- 5: Reduce to the Windows 256 color halftone palette (Only works in 256 color display mode)
- 6: Reduce to the Netscape 216 color palette

## Barotrend.gif

If you require the atmospheric pressure graphics also represented in the mini display for otherwise purposes, you can discontinue the look here.



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# Single / Mini Graphics

Parallel to the graphic representation in the diagram also single values can let announce you to themselves in this extrawindow.

The scaling is done on the happening ones Minimal- and/or. Maximal values.

The dates at the "cursor position" are reproduced besides under the time axis.

The window size is freely optional and is "noticed" after leaving of this function.

The chosen sensor is noticed also, however after a program new start is put back onto the outdoor temperature sensor.

The background color is according to the main diagram, the scale line color according to the chosen color for the "sensor". This text - color of the info line is like the chosen font color for the copyright display is in the main diagram.

About the menu items "**Print**" you can print the represented graphics (according to the representation) directly and/or store the represented graphics with the menu item "**Create Graphics**" as Gif-graphics (also according to the chosen window size). With **PDF**, you can a PDF - file with the graphics content generates

Under "Internet" - "Adjustments" - "Graphics" and/or "Sensors" you can choose, whether and which graphics are made in the current program run or during "Update Internet files" automatically.

These made minigraphics have in this case a firmly defaulted name scheme **mini\_\*.gif** (see files) and a firmly defaulted graphics size of **312x194 pixel**. (modifyable under Internet, Graphic or in WSWIN.CFG)

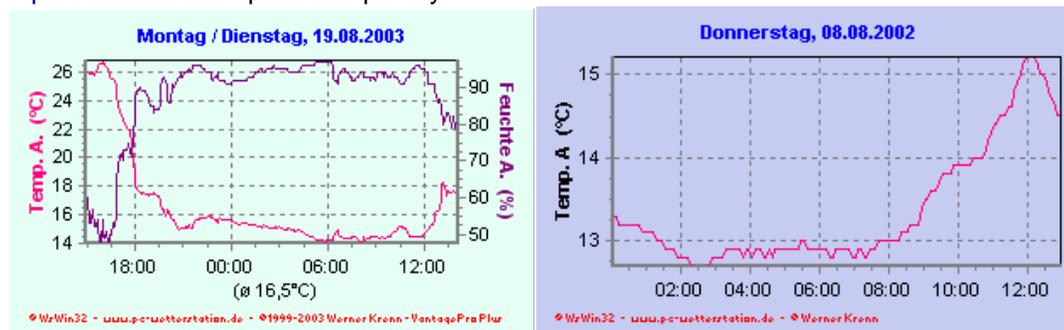
WSWIN.CFG

```
Paragraph    [View]
Entry        MiniGraphWidth=312
Entry        MiniGraphHeight=194
```

Range            Width: 170 .. 480            Height: -133 .. 640

## Show associated Sensor

With election of this option becomes with affiliated sensors (normally temperature and humidity) always represented the affiliated value additionally as well. In the case of in addition chosen option „Minimum and Maximum ...” and day representation this option has priority.

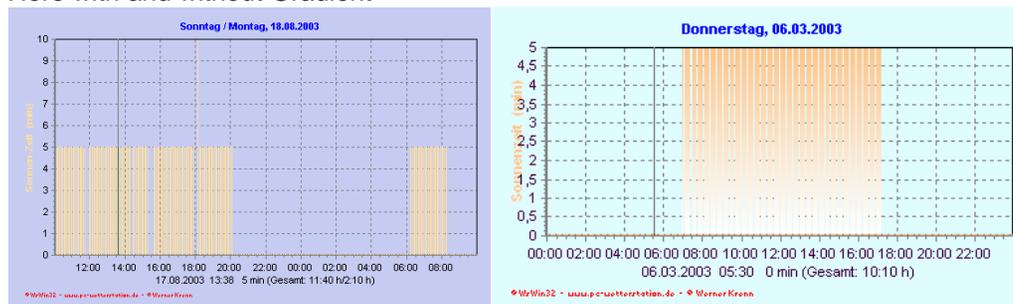


## As Column: none Gradient

With column representation (rain, sun time etc.), becomes, if the background color isn't "white", the "column" is as so-called gradient (color transition) represented.

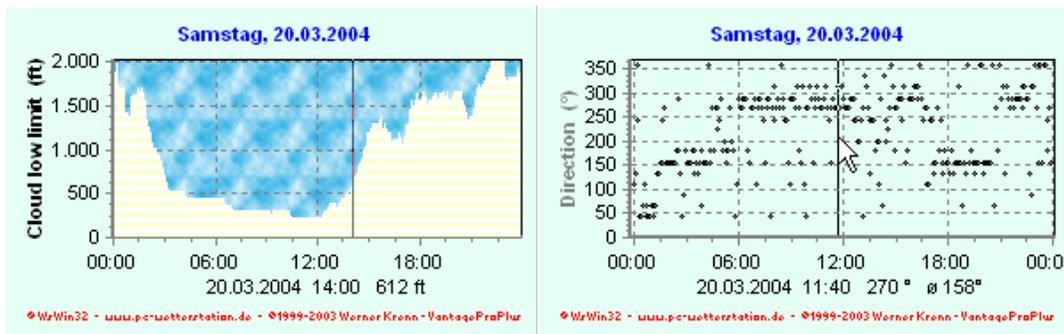
If you didn't like this, so choose this option!

Here with and without Gradient



## Cloud low limit:

## Wind direction with Dots



**Minimum and Maximum ...**

When the chosen graphic size has **at least a width of 450 pixels**, also the minimum value and/or maximum value in the day representation and/or the chosen time (hour / day) in the week, month or year view is denounced.

While creating of the mini graphic a chosen **minimum width of 312 is pixel necessary**. In addition the option **"Graphic: show Total"!**

-> with chosen option "shows associated Sensor" and representation of the affiliated sensor (temperature as well as humidity) this option is applicable only to the 1. sensor as well as is ignored.

**Graphic: show Total**

Represent with your saved "mini graphics" with all diagrams always the total vlau<sup>e</sup> as well as average value.

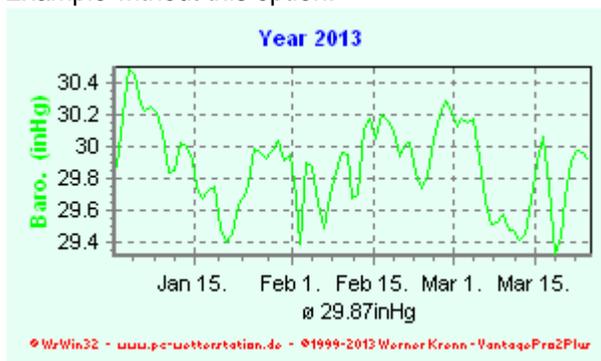
- With the showing of 2 values (only day representation) shows the
1. current values            the sum of the Viewing time period (24 hours)
  2. current values            the sum only of the current day

-> this option is only relevant for the manufacturing of the mini graphic pictures.

**Period: show Total**

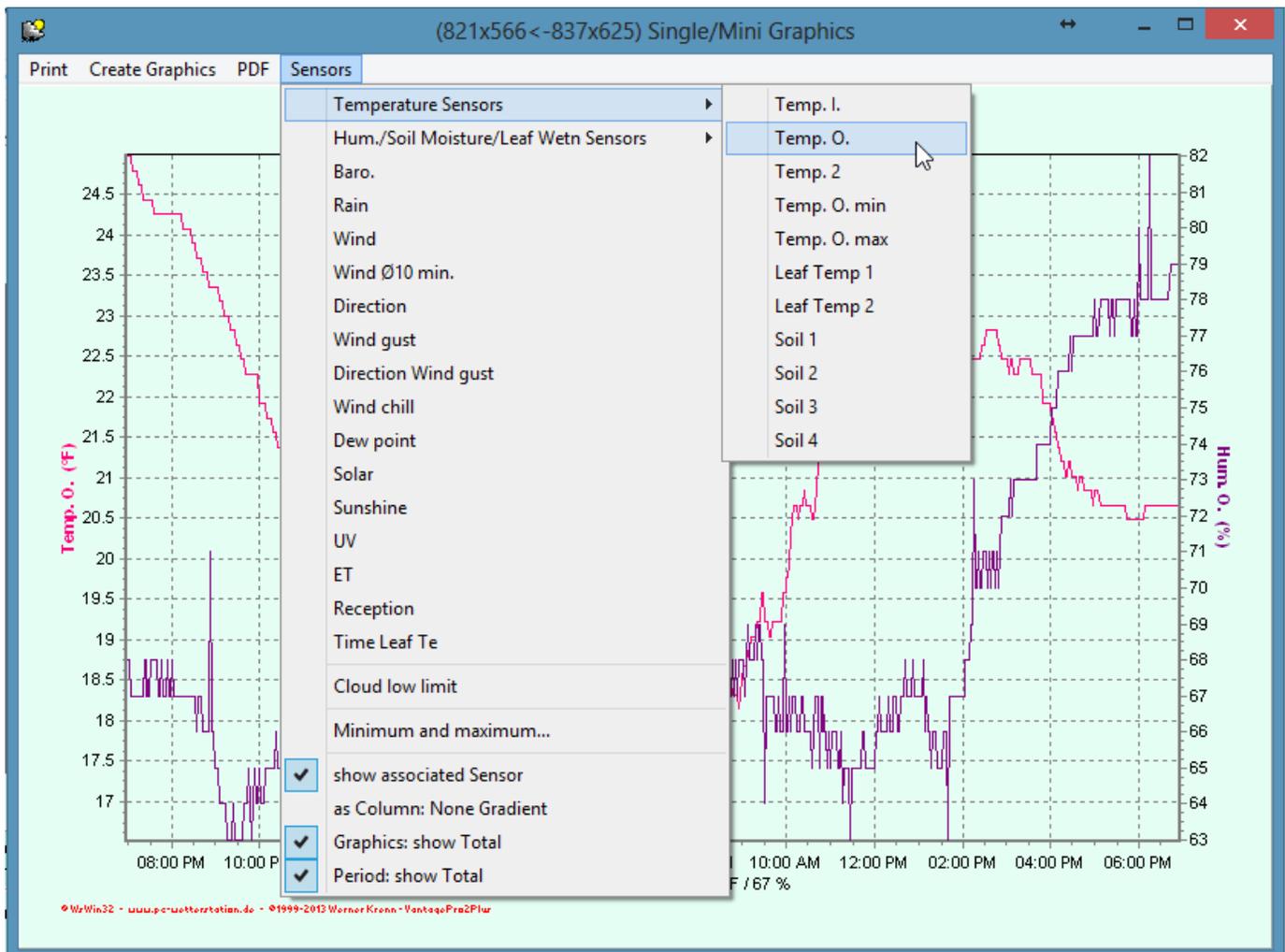
With selected option the week-, month-, year graphics are shown with the whole period.  
*Not anticipated for day- and time-view!*

Example without this option:



Example with this option:





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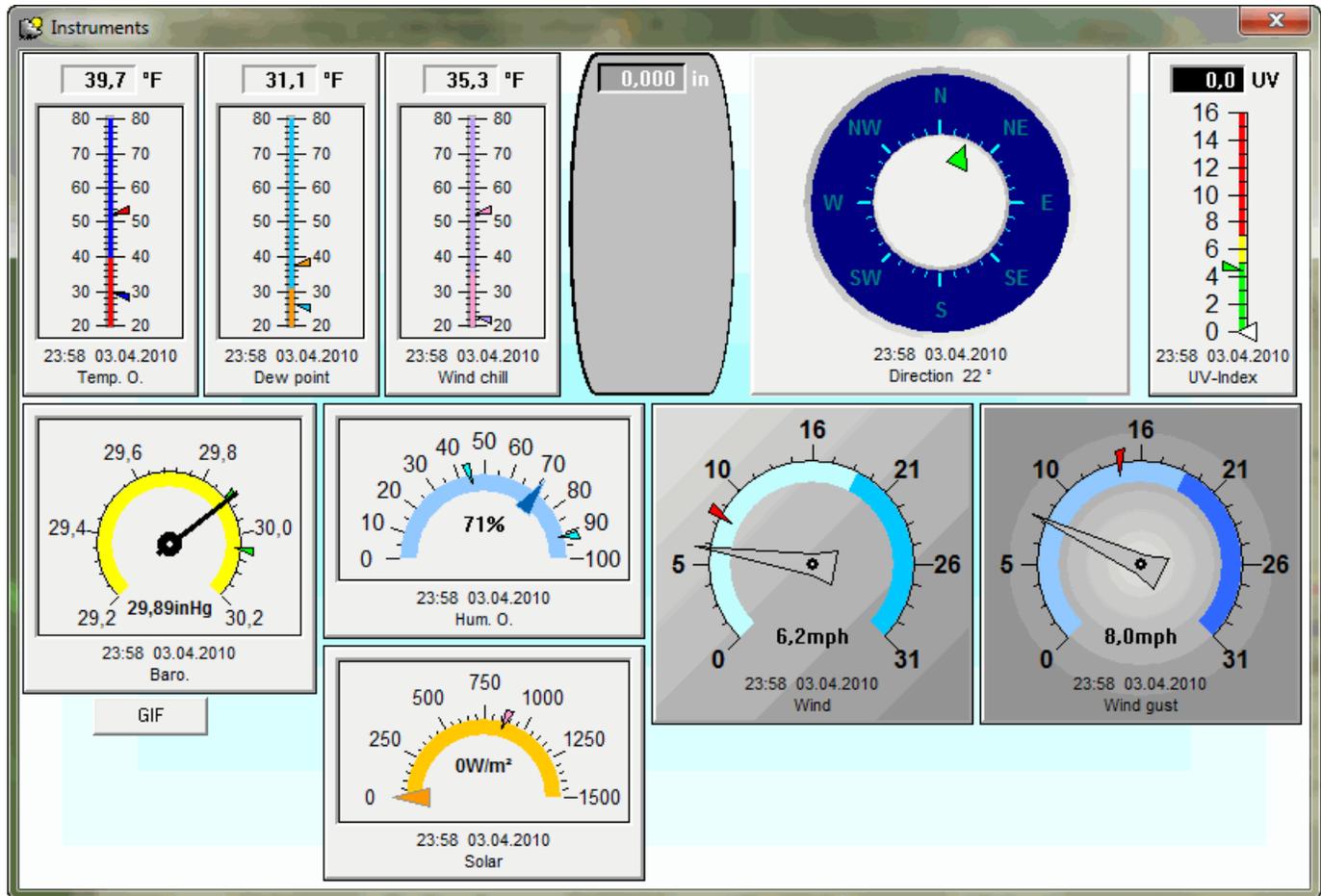
# Instruments

View menu of the main-measuring-values as instruments.

Certain instruments are represented only at weather-stations, which put (for example UV only near VantagePro) the corresponding measuring-value also to the disposal.

With GIF, you can stores the instruments as graphics-gif file in the Html - folder.

For the complete representing, a screen-resolution of at least 1024x600 is necessary!



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# Update

With Windows it is possible that the graphic display of the weather data in the diagram can not be done completely. By calling this function the Display can be updated in order to correct possible mistakes. The call of the function is also possible with button [F5](#) possible.

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## Quick start bar

With this function you can choose whether the symbol bar with the command buttons is visible or not. For the fast call of all functions with the mouse the symbol bar should be turned on always as a rule. By making the symbol bar invisible on the other hand the display of the diagram can be enlarged.

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# Display bar

- Is valid only for ELV PC wireless interface
- for Weather Stations see below

With this function a display bar can be made visible or invisible at the lower window.  
In the bar the last current measured values with the time of reading out are displayed and/or. the corresponding cursor values.

## Standard-Sensors

Here you choose, which sensors are supposed to be displayed as value in addition.  
Up to 8 values are selectable. Chosen sensors that are unavailable are not displayed – there is no display for them.

<a href="#">Weather data</a>	Temp. I.	68.7 °F	Temp. O.	64.9 °F	Baro.	29.62 inHg	Leaf Wetrn 1	0 lf
05/24/03 20:55	Hum. I.	51 %	Temp. Out2	64.9 °F	ET	0.000 mm	Soil Moistur	140 cb

For [Weather data](#), you can deposit a "link" ([Weather data link](#)).  
A "activated link" is recognizable if you drive over with the mouse that then shown blue weather data and is underlined.

## Additional-Sensors

In addition to the standard-sensors **Four** and/or **Eight** more **sensors** can be defined for the display.  
However a correspondingly great screen resolution and program window size are necessary for the display. If the program window size is too small for the display, "**no display**" is defaulted for the corresponding sensors and can not be changed.

If you choose the option "**just short description (T1,H1...)**", you can select eight additional sensors for displaying.  
As description for the sensors only the type (Temperature-T, Humidity-H, Barometer -B, Wind-W, Rain-R) with the sensor-no is displayed.

If the wind direction is chosen for the **First** or **Second** of the additional sensors, the display is in degrees.

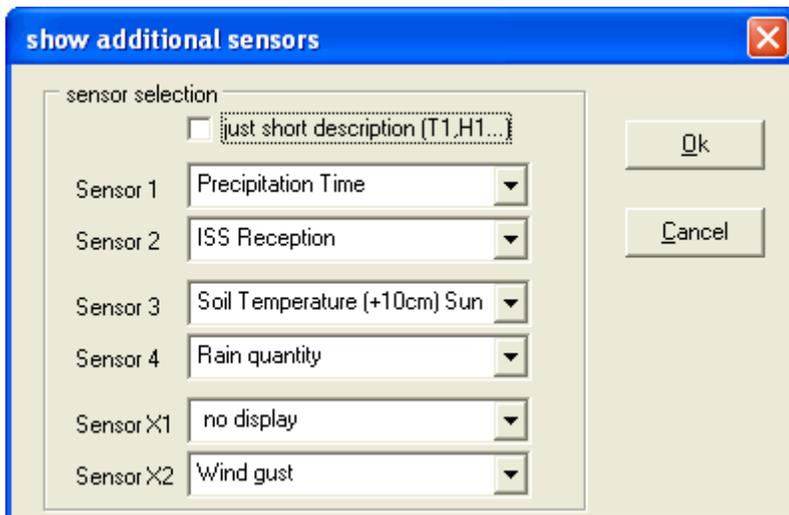
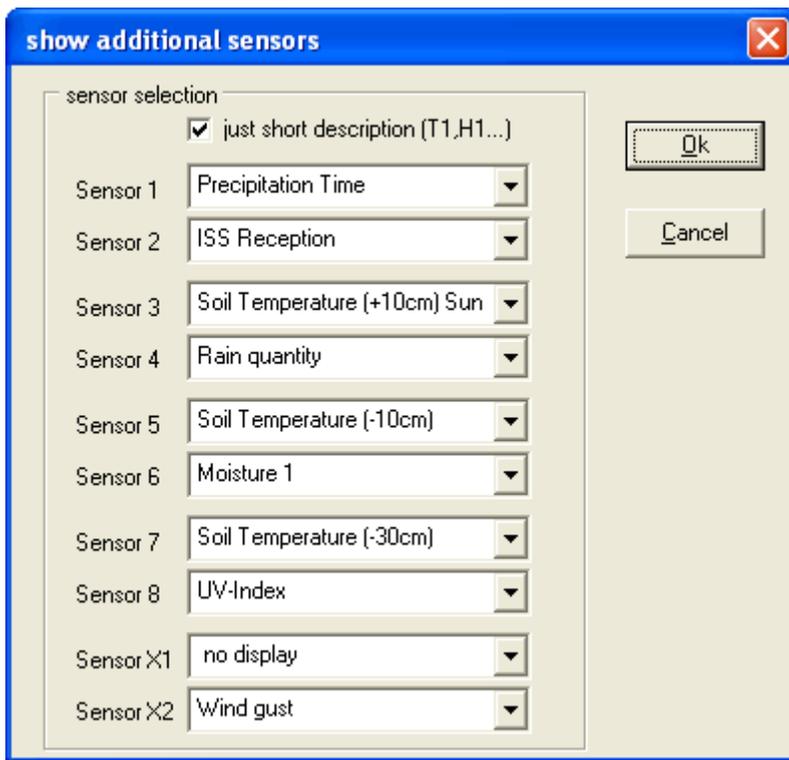
When choosing the rain amount, the rain amount is shown for the **First** of the additional sensors as difference between 2 measuring times (Range, hour, day); for the **Second** of the additional sensors the entire rain amount is shown (Metering pulses and/or mm, as received directly from the rain sensor and admitted with the rain amount calibrating-factor) - **in recognizable form at the leading "#"**.

T14 54.0°F	T13 55.9°F	T12 63.0°F	XT 0.00min
UV 0.0UV-I	T8 62.1°F	T2 64.9°F	RX 90.35%

Example view of additional sensors with short description

With help of the cursor keys (Up, Down, PgUp, PgDown, Pos1, End) you can get to the values within the diagram, whose values are then displayed here.

If the display bar and the minimum-/maximum bar are switched off, the cursor functions are unavailable.



## - Weather Station WMR-918

With the Weather Station WMR-918/968 and WM-918 the display bar has the function of the direct "online-display" of the received data.

Only data which were received are shown.

The sensor choice (standard sensors/additional sensors) is therefore deactivated.

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# Min-/Max-bar

This function allows switching on / off the Min-/Max bar in the lower field of the main window. The Min-/Max bar contains information about the MinValues, MaxValues, Averages and the current and/or cursor values.

The display is adapted according to the chosen display period (Day, week, month, year).

If with [Alarm values](#) the reaction "Display values in colour" was chosen, the values are displayed in colour in case of attaining the alarm values.

For the representation of wind/gust of wind one can let display the direction or the wind velocity (Beaufort Bft) with a corresponding option.

For the representation of the air pressure the max. air pressure change becomes besides (for example:  $\wedge 2\text{hPa}$ ) announced with reference to an hour in the shown period (only **day** and **week**).

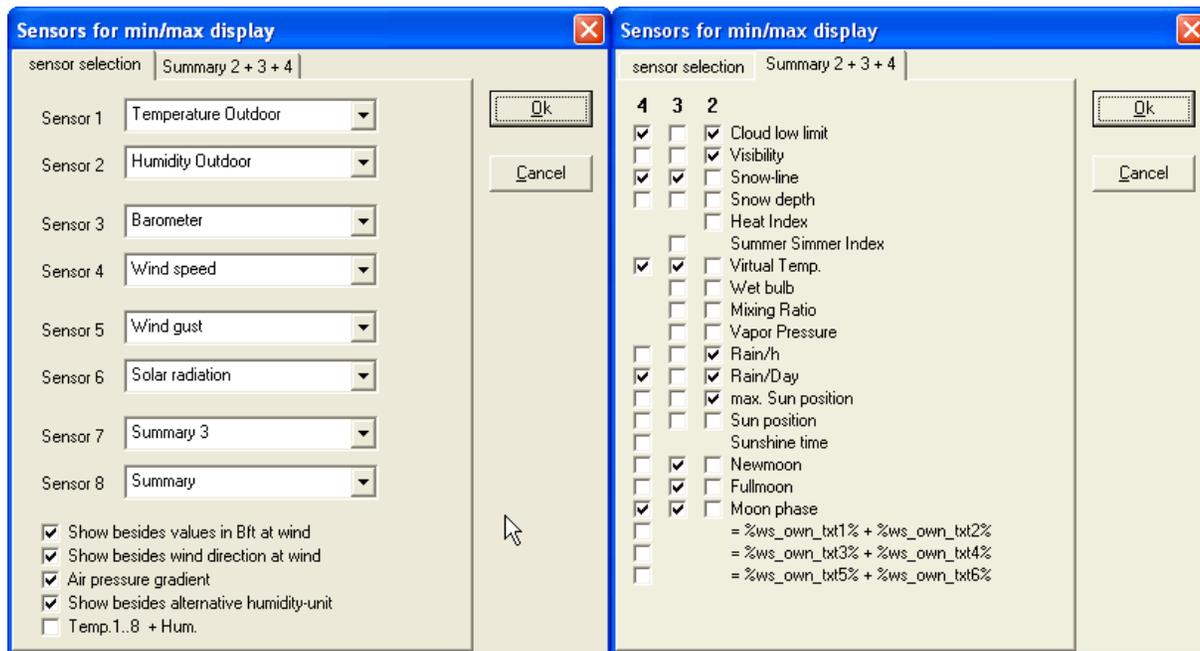
8 sensor measured items can be chosen at the most - the selection is done with a "click with the left mouse button" in the field the of Min-/Max bar.

The screen display of the program is decisive for the sensor measured items displayed in fact.

Only in the maximize-mode and a screen resolution of 1024x768 all 8 sensor measured items are displayed.

By making the Min-/Max bar invisible the size of the diagram can be increased

If the Min-/Max bar is displayed, it is also considered at "Save diagram graphics" and/or "Update Internet files ..."



Example: Min-/Max bar

Month view:

Sensor	Temp. 1	°F	Hum. 1	%	Baro.	inHg	Wind	mph	Rain	in	Sunshine	h
<b>MinValue</b>	05/05/ 08:25	40.6	05/01/ 11:25	28	05/23/ 17:40	29.51	05/01/ 08:35	0.0	Rain days: 14			
<b>MaxValue</b>	05/18/ 14:36	81.5	05/04/ 03:30	98	05/16/ 01:05	30.39	05/07/ 21:3NE	14.3	05/12/ 04:11	0.654	05/09/ 20:25	1.67
<b>Average</b>	(+ 25.30 )	57.30		69		29.9	255.1 miles	4.2	Total:	83.025	50:10 h	2
<b>05/31/</b>		<b>55.8</b>	7.01 g/m³	<b>61</b>		<b>30.22</b>	2 Bft N	<b>4.8</b>	3,269 in	<b>0.351</b>		<b>1.67</b>

Day view:

Sensor	Temp. 1	°F	Hum. 1	%	Baro.	inHg	Wind	mph	Rain	in	Sunshine	min	Cloud low li	626ft
<b>MinValue</b>	04:20 AM	46.2	09:20 AM	62	07:05 PM	29.60	12:00 AM	0.0			05:35 AM	5.00	Visibility	4-6miles
<b>MaxValue</b>	05:25 PM	62.6	12:00 AM	98	12:00 AM	29.89	01:40 PM N-NE	11.9	09:20 PM	0.096			Snow-line	18406ft
<b>Average</b>		53.40		85	$\sim 0.06\text{inHg/}$	29.7	4.8 miles	4.8	Total:	0.446	1:40 h	0	Virtual Temp	52.4°F
<b>05/27/ 23:55</b>		<b>50.2</b>	8.71 g/m³	<b>92</b>	unstable	<b>↑29.67</b>	2 Bft N	<b>4.2</b>	0.446 in	<b>0.000</b>		<b>0.00</b>	Wet bulb	49.1°F

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# State bar

This function allows the switching on/off of the status bar in the lower field of the main window. The status bar contains information about the current settings (chosen period, interface and so on). By extracting the status bar the size of the diagram can be increased.

## In the left status bar field error report and information are announced:

### - for Wireless interface

In this field the time is displayed during the read-out of data, when the next weather data probably will be available. If in addition to this countdown counter a new tally appears in brackets, for example 00:59 (29) - this tally appears only if the time is under 60 sec and/or 30 sec -, in case of attaining of ZERO, the V24 interface is activated thus and the PC wireless – interface is scanned for the next data record.

After the first read-out of the data from the wireless interface this time is **synchronized first** - here the data interrogation occurs all 30 sec and/or 60 sec with measuring intervals  $\geq$  of 10 minutes. After the synchronization the data interrogation occurs in the same interval as with the wireless interface.

### - for Weather Station WMR-918/968/WM-918

During recording the time is displayed, when the next data record is going to be saved. Received data are displayed with time and sensor-type (Indoor/Outdoor, 1..3, W,R). If the display bar is switched off, the data of the obtained sensor (internal computed values) are displayed in addition. The received data are **displayed too**, even if they are not recorded

### - for Weather Station VantagePro

During recording the time is displayed, when the next data record is going to be saved. On the right site the time of the last receiving is shown.

### - at File Watching

If a file-change was recognized, the date-format and time / date are announced by this data record:

For example: **WS2300 -> 17:30 12.11.02**

In addition the time of new dates since the last arrival.

- If behind the data one "(x)" appears additionally, it is not about any "new" data however, the master program **altered** the file!
- If behind the data one "+x!" appears additionally, further x data records were „taken over“ in addition to the current data record.

### - at Pause/Waiting operation

It shows „Pause" and additional when the next time the interface/Weather station „is read out“. In the Waiting operation, the time is shown, when the normal recording continues.

## Examples:

01:44	39.min - 22:38:58
01:23	53: - 22:39:28

Display bar switched off (This display not at WM-918):

00:56	St: 20.6°C 62% 949hPa WF: 4- 22:40:06
-------	---------------------------------------

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# Alarm values

During the recording of weather data the Operating- and Data Acquisition Software can, like the Weather Station, react to falling below or to exceeding of specific values. Unlike the Weather Station all measured items can be considered here.

During the attaining of one of these thresholds a Hint can be displayed optionally, a sound file can be played or an arbitrary program can be called that guarantees for example a reaction then.

After calling the function the thresholds of all measured items are displayed, first of all, in a list. Through that a view of all defined minimum and maximum values exists at any time. The list contains in this case only the measured items which were chosen with the function [Available Sensors](#) in the menu "Wireless interface"

By a double-click on the respective entry, pressing button "Enter" or call of the command button "Editing" the corresponding setting (Thresholds and reaction) can be done in a separate window

## Hint:

Checking of all thresholds occurs only through the Operating- and Data Acquisition Software.

The thresholds are checked only if at least one value is not equal to "Zero". A check of the thresholds is furthermore only possible if the function "Start recording" was activated in the menu "file".

## Alarm value

These input fields contain the minimum and maximum value, where an alarm is caused when falling below or exceeding it.

## in green Colour

- *this option is available only in case of reaction "Display value in colour".*

If you would like to employ the **Minimum-value** as an **OK-display** during the reaction **"Display value in colour"**, you can achieve this with this option. The "threshold" is displayed then in **green**. Instead of in **red**.

If the minimum- and the maximum value are chosen to be displayed with **"Display value in colour"** in case of Value **"in green Colour"**, the value is dyed **green** if the threshold is in this field.

## Reaction

These fields determine, which reaction is supposed to occur when reaching the threshold. Here a Hint window, the playing of a sound file (WAV-file) and the call of an arbitrary program can be selected.

If the reaction "Display value in colour" was chosen, the current values in the Min. /Max bar and the Display are dyed according to the alarm value in colour.

If the reaction **"Note print"** was chosen, in case of an alarm the hint is displayed and closed automatically after 15 seconds. (Can be adapted, so that no automatic closing occurs).

Background: (Concerns only ELV-interfaces).

As long as such an alarm hint is not closed, no weather data are read out from the interface !

Who would like a non-volatile advertisement again (to acknowledgement):

File wswin.cfg Section

[\[Options\]](#)

AlarmTimeout=15 -> value at 0 alters or inputting other value.

Whoever chooses a permanent Showing here, whose ELV-Interface (and OEM'S) reads until to the Acknowledgement then no more data from.

- does not concern [Huger/OSI Weather station](#), here presumably a non-volatile advertisement can be chosen.

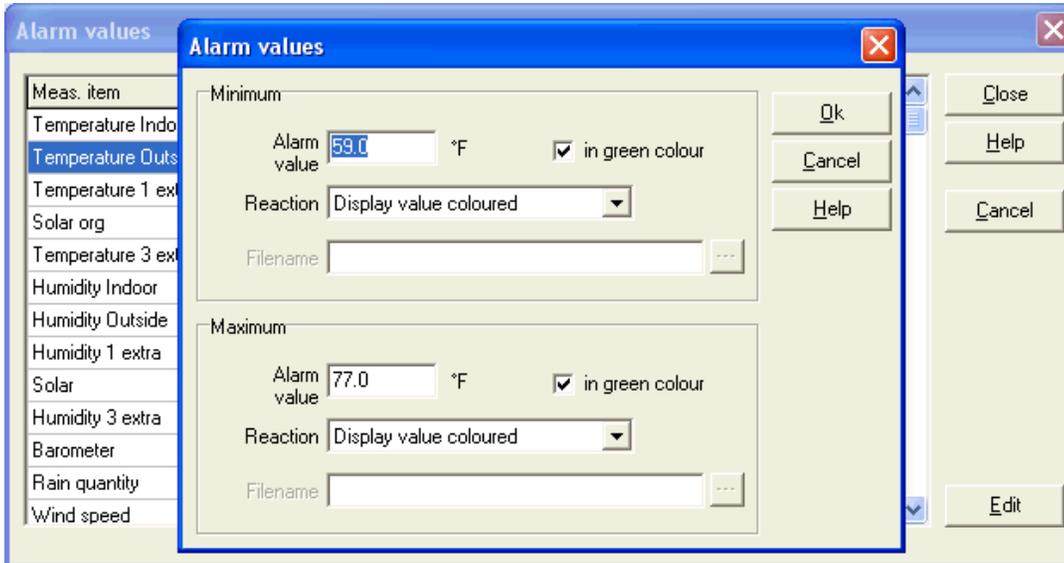
## File name

The name of the sound file or the program can be entered in these input fields. This file will be carried out when reaching the threshold. The program file can also contain parameters in this case. Example: "C:\CONTROL\TEMP.EXE 1 +5".

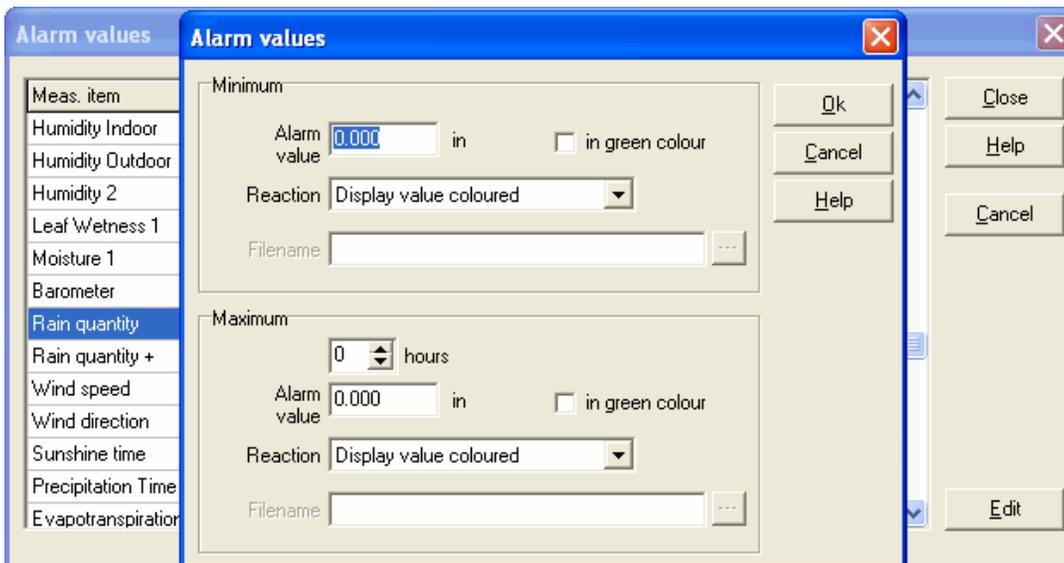
The alarm reaction is caused again at every storage of a new record and as long as, until the alarm condition is no more given.

If you want, that the alarm reaction is executed only once, you can activate this with the Option "executes alarm event only once".

The alarm reaction becomes again active in this case, if the condition for the alarm value no more given once -> once again in order.



At the rain you have to in addition the possibility to relate the alarm to the set hour period over **0..24-hours**, **0 hours** = as up to now = current value.



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# Time-Control Options

## Time control

Time control function should be done.

## Use external FTP program

For the transfer the external program is supposed to be used.

## External FTP program

With this function program files are supposed to be transmitted to the WEB - server.  
for example FileZilla - is freeware.

## Options for external FTP/TFTP program

In addition, possibly necessary options for the transfer with FTP program can be indicated here (for example scripts, file selection etc.). Consider here, that most programs interpret this option wrong with path specifications with "Blanks" in the name. Therefore one should employ the corresponding DOS names for that, e.g.: instead of "**Eigene Dateien**" - "**Eigene~1**"

### Transfer with Windows own FTP-program (Example)

External Program: **E:\Winnt\system32\ftp.exe**  
Options: **-v -s:"D:\Wetter Programme\Vantage\ftp\_send.txt"**

#### Content ftp\_send.txt:

```
open ftp.own_homepage.com
user name
password
lcd "d:\Weather Program\Vantage\html"
cd weather
binary
prompt
mput mini_current*. *
send windbft_current.gif
send ddis_current.gif
send aktuell.gif
send aktuell.htm
send current.html
send custom.html
send awekas.txt
send data.htm
send minidisplay.gif
send test.html
quit
```

## Time for update by FTP

After the time here chosen the external Ftp program is started – condition: choose "**use FTP program**".

At the **hours** you can with „**minutes offset**“ achieve besides a minute shift.

For example 1 hour and 9 "minutes offset" so the carrying out occurs at 0:09, 1:09, 2:09 and so forth.

However, if the minute offset is bigger, as the chosen updating time, so it is ignored.

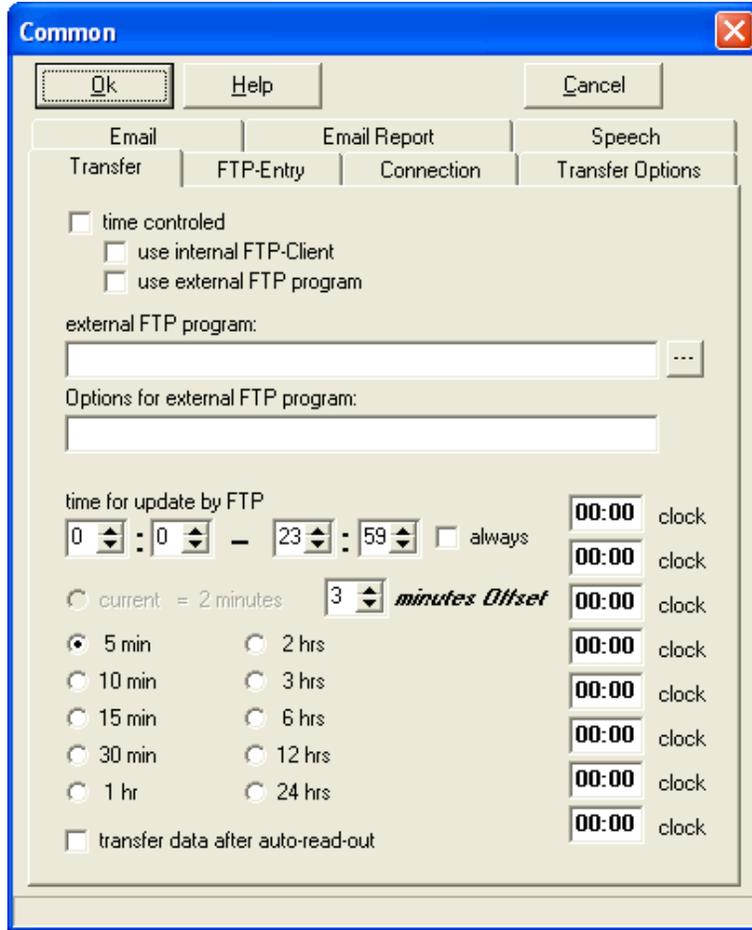
Example: Updating time: **10 min** - allowed offset **0 ..9 minutes**

## Transfer data after auto-read-out

These options allow the automatic Creation/Transfer of the current files according to the chosen option "Automatic read out **weather data at start**" and/or during the start of program with the corresponding "**Command line options**". If you start your Weather Station program time-controlled in order to read out the weather data, you can make the current-files simultaneously with this function, transmit the current-files with FTP-program: If you start your Weather Station program time-controlled in order to read out the weather data, the current-files end then automatically again.

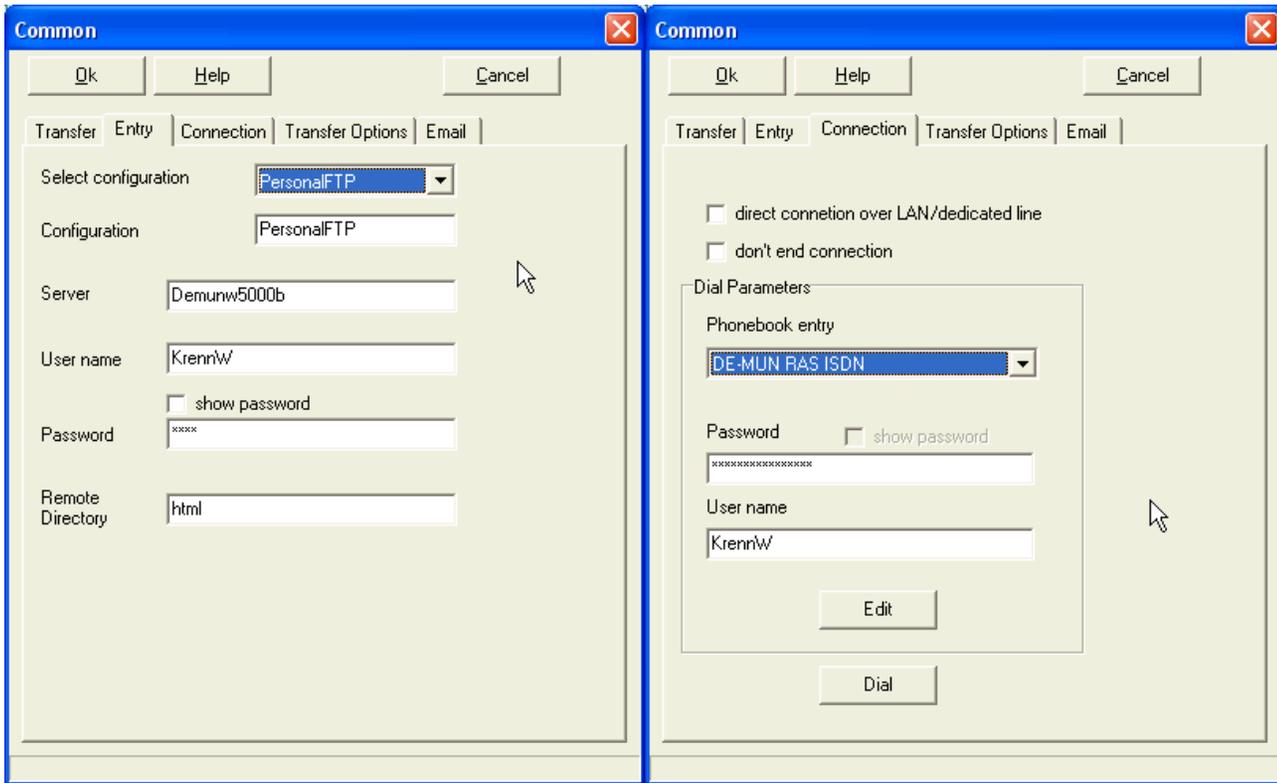
**Condition at use without "command line options":**

Employ option "create updated data files in recording mode" and "use FTP-Program".



## Options for FTP client

**Caution not relevant!**  
**Because the internal FTP-Client is not available for the user!!!**



# Transfer Optionen

## Before transfer post Internet files

Before the FTP transfer the Internet files should be posted.

**This option is necessary so that the following options are carried out**

**Consider:** The Internet files become autom. posted only once on day.

The chosen options under "Internet" - "Common" have priority before these properties and when there chosen, the corresponding options are ignored here.

- Before transfer post current files
- Before transfer post Weather symbolic file
- Before transfer post customised Html files
- Before transfer create Mini-Display
- Before transfer create wind distribution graphic

Eine Sonderstellung nimmt dabei **"custom.txt abarbeiten (nur bei ,ohne Interface')"** ein:

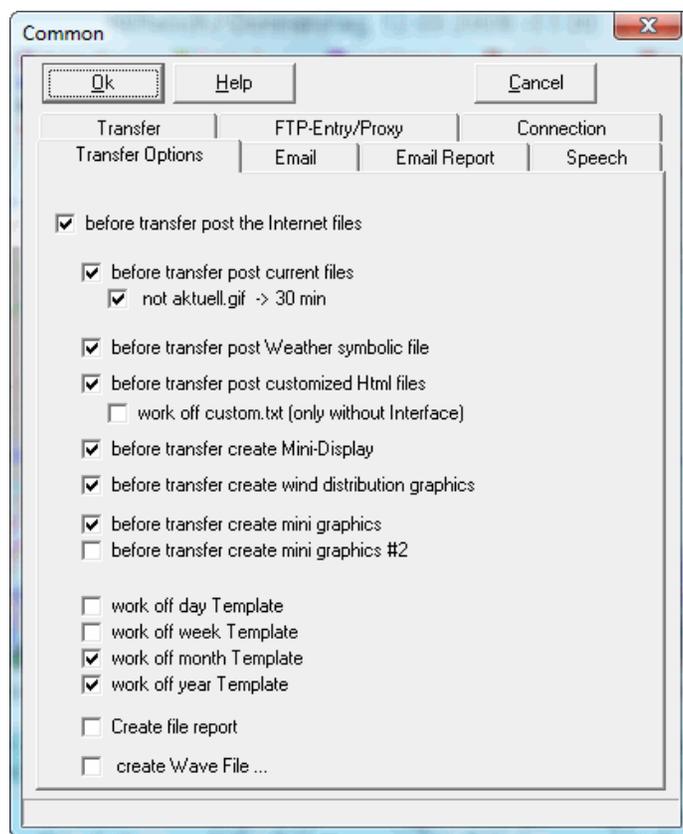
Wer ohne Wetterstation/Funkinterface arbeitet, aber z.B. immer aktuelle Sonne-/Mond-Html-Seiten erzeugen will, kann unter zu Hilfenahme der „custom.txt“ dies verwirklichen – siehe auch die mitgelieferte Datei sunmoon.txt

A special meaning takes in this case **"work off custom.txt (only without 'interface')"**:

Who works without weather station/wireless interface, however, for example, always wants to make current sun-/moon Html sides, can realize this under the helpness of the "custom.txt" – look at the delivered file sunmoon.txt

Please choose here your options which you need.

Full information on that, can you find under „Internet – Common“



# Email

If you have **more than one email receiver**, you must they decollate with ";" (Semicolon).  
The selected profile (Email1 .. Email3) will be used for sending of the alarm messages!

## File-Attachements:

If in the text folder (look at [APRS/Template](#)) a file named „**ws\_email?.txt**“ is found, this file will be send as „Text-Attachement“ with the email!

? = 0 for report file

? = 1..46 Sensor-Nr. (look at [Indexe](#)) for the **Alarm-Email** attachement.

Remark about Char-Set:

Default setting is „**us-ascii**“ or „**ISO-8859-1**“

With certain provider and use of special characters, for example °C, it can be necessary to change to another font (Char-Set). A own Election per configuration is possibly.

In Europe also usual: "Western Europe"

## Program „Blat“

If you have problems with the email sending, I recommend, to use external e-mail program

"Blat" – to find under <http://www.blat.net> . So store the Blat-Exe file in a search-path-folder for example. **C:\Windows** or **C:\Windows\system32**.

## -of (-optionsfile) -> blatconfig1.cfg ... blatconfig5.cfg

If you require particular Blat configurations for this, you can to this with "blatconfig1.cfg" for Email-Config1 etc...

The screenshot shows the 'Common' dialog box for Blat configuration. The 'Email' tab is selected. The configuration is as follows:

- Select configuration: Email2
- SMTP-Server: smtpmail.t-online.de
- Port: 25
- User name: werner.krenn@t-online.de
- Authenticity: LOGIN
- show password:
- Sender Email-Address: werner.krenn@t-online.de
- User name: Werner Krenn
- Receiver Email-Address: werner.krenn@t-online.de
- Char-Set: Westeuropa
- Receiver CC-Email-Address: (empty)
- Receiver BC-Email-Address: (empty)
- Program "Blat":
- of (-optionfile) -> blatconfig1..5.cfg:

A button labeled 'Email testing' is located at the bottom right. A URL <http://www.blat.net> is also visible at the bottom right.

## SSL-Mailsending:

Following measures as well as Preconditions are necessary:

- on the PC the program **blat** must be installed (it should be the version 3.1.2 or newer)
- the program **Stunnel** (stunnel-5.1-installer.exe or newer) must be installed
- in WSWIN then must at "Email" and here at STMP-Server "localhost" if STunnel runs on the same computer as Wswin or the IP-Adresse, where STunnel runs, is written down, at port the chosen port which is set in the **stunnel.conf**.

### Example-Entry in the stunnel.conf

```
[t-online-smtp]
client = yes
accept = 5025
connect = securesmtp.t-online.de:465
```

## Email Report:

If you want to send a current weather report once on day, can you here this activate.  
You can default for this purpose also another "configuration" as for the alarm email.

Under "Selet configuration" you tune the "section" which is supposed to be used to the sending of the "report" !  
The form of the report is defaulted firmly - if you request another "form", can you possible dissolve that with Selection of customised Report and available file "**custom\_r.txt**" implement.

If you want to send the email **report** only in the header line (Subject), you can activate this here - but must use however then in addition the **custom\_sms.txt** file (as well as must be existing!).

Consider that everything may stand only in a line - if the overall length surpasses the 160 characters, is truncated the text rigorously on 160 characters length.

If you work with the "**custom\_sms.txt**", the entered Subject text is ignored (therefore greyed out and not changeable).

You can sent the email-report with automatically repetitive times and to 5 solid times (independent)

Heed also the possibility of the mail report timing control over the [ws\\_controll.cfg](#)

-> You can also alter this over the to using "Profile"=Configuration.

- for the **week report**, the user-defined data file **custom\_rw.txt** is necessary

- for the **monthly report**, the user-defined data file **custom\_rm.txt** is necessary

If **00:00** set as execution time for the week / monthly report, the function is **off switched!**

The screenshot shows a 'Common' dialog box with several tabs: Transfer, FTP-Entry/Proxy, Connection, Transfer Options, Email, Email Report, and Speech. The 'Email Report' tab is active. It features a 'minutes Offset' spinner set to 0 and radio buttons for frequency: X (selected), 1h, 2h, 3h, 4h, and 6h. Below this is a 'Select configuration' dropdown set to 2, and 'Week' and 'Month' dropdowns both set to 1. A time selection area shows '00:00' and a red warning 'custom\_rw.txt ?!'. A grid of checkboxes allows selecting specific days and dates. At the bottom, there are checkboxes for 'customized report (custom\_r.txt)' and '... Subject (max. 160 & custom\_sms.txt)', a greyed-out 'Subject' text field containing 'Wetterdaten Report Lackenhaeuser %ws\_date% - %ws\_time%', and an 'Email testing' button.

## Example:

Weather data - Report: Lackenhäuser 2769 ft above sealevel  
Wednesday, January 30, 2002 - 11:59 AM

### Temperature Outside

current	43.0	°F	
Average	37.9	°F	
min.	34.5	°F	02:56 AM
max.	45.3	°F	12:30 PM

### Temperature 1 extra

current	45.3	°F	
Average	40.2	°F	
min.	37.0	°F	02:56 AM
max.	48.7	°F	12:28 PM

### Humidity Outside

current	84	%	
Average	84	%	
min.	56	%	03:13 PM
max.	98	%	10:51 PM

### Humidity 1 extra

current	88	%	
Average	88	%	
min.	58	%	01:11 PM
max.	94	%	10:11 AM

### Dewpoint

current	38.5	°F	
Average	34.2	°F	
min.	27.8	°F	03:44 PM
max.	41.8	°F	11:26 AM

### Wind chill

current	43.0	°F	
Average	35.8	°F	
min.	29.2	°F	07:59 PM
max.	45.3	°F	12:30 PM

### Wind gust

current	4.0	mph	2 Bft	
Average	3.1	mph	1 Bft	
max.	12.6	mph	4 Bft	- E-NE 06:55 PM

### Wind speed

current	0.0	mph	0 Bft	
Average	2.7	mph	1 Bft	
max.	9.8	mph	3 Bft	- N 06:56 PM

### Wind direction

current	N	10 °
dominating	N	

### Precipitation

last hour	0.000	in
last 24 hours	0.000	in
current week	0.622	in
current month	5.405	in
current year	0.000	in
Rain / Year	0	days

### Barometer

current	30.22	inHg	
Average	30.27	inHg	
min.	30.19	inHg	01:56 PM
max.	30.31	inHg	02:56 AM

### Air pressure tendency

-0.05	inHg/1h
-0.06	inHg/2h
-0.07	inHg/3h
-0.07	inHg/6h
+0.01	inHg/12h
-0.02	inHg/24h

Weather forecast: rainy

Weatherstation Operating- and Data Acquisition Software V2.80.0

# Speech

If no supplementary **SAPI4 Engine** is found during the start of program, that is announced here, a gross-steeply the speech options' stands then not for the disposal (deactivated)

A speech-Engine (SAPI4) must be installed – the **SAPI5 of WinXP** is not supported!

That is, if WinXP users want to use this function, they must also install the SAPI4 - Engine.

The registered users can load the necessary files for that from the folder "Speech" and install the necessary files for that.

The national language variants are additional necessary - find under corresponding "country folder".

In addition you find a link to a Microsoft page here, where you further files and help for the Speech-Engine download can. They can employ, of course, also a software liable to pay the costs with SAPI4-support !

The file "*lame\_enc.dll*" must be available - else **WsWin does not start** anymore.

**Exception:** You use *WsWin32ns.exe* - here the voice output is not integrated

This DLL is necessary for the transformation of the WAVE files in MP3 files -> with that, file size saving of approx. 90 % !

Lame\_enc.dll is released under GNU GPL

A lot of thanks for this purpose at Alexei O. Sabline (a\_sablin@mtu-net.ru).

## Options:

Possibility a voice output every full hour and/or. to make a WAVE file and possibly a MP3-Sound file of the meteorological data.

Support for voice output and WAVE/MP3-file-generation:

After installation of the "Engine", "Sam" always is as default preset speakers = American, masculine speaker.

- can and should be changed here in the "drop down menu of the speaker selection".

A MP3-file is stored always in the HTML-folder!

The file name of the MP3-file is derived by the WAVE-file !

For the generation of an own WAVE/MP3 file is the file "*ws\_speech.txt*" planned (look sample file *ws\_speech\_.txt*)

- In this file are as default the "units"-edition disabled. (-> %unit\_off%)
- The speech output is supported with new variables: %unitnamelong[x]%, %wind\_txtlong%

Caution!

The average file length of a Wave file conducts ~700 KB, that a MP3 file from that ~70 KB.

When you let create this file(s) over "Time controlled", the carrying out of the FTP program is delayed for so long, to the generation of these files (Duration is this example approx. 30 sec.) concluded is.

With FTP transfer and simultaneous voice output every hour, so the language output occurs 1 minute later.

Who wants to make the speech-file available also on the WEB page, should note, that not all have "DSL" and a FlatRate.

**- = minus**

If the used Speech-Engine doesn't speak any negative values, for example (-15,4), you should activate this option.

## Wave-File

A default-Wave-file (MP3-file) is made with the sensors which you chose under Speech

**>= 1 hour      30min      20min      10min**

The Wave File (Mp3 file) is created only **maximally** once every time here selected (1hour, 30min...) - dependently on the updating range with FTP.

## Wave-File <-> *ws\_speech.txt*

A Wave-file (MP3-file) is made from the file *ws\_speech.txt* . In the file *ws\_speech.txt* you can set in arbitrary variable, these are replaced before by the "correct values"

## Create Txt-file / Txt-file -> Wave file:

When a file *Ws\_speech.txt* (customised Voice output file) is found, in his file the variables with the current values is replaced and spoken then.

If no file *ws\_speech.txt* is found, a *ws\_report.txt* (Weather report) is made and spoken then his content.

At choice of **Txt-file -> Wave file** is instead of speaking a Wave file made and possibly still the corresponding MP3 file (if option activates)

The hourly voice output can one individually form with the file "ws\_speech1h.txt".

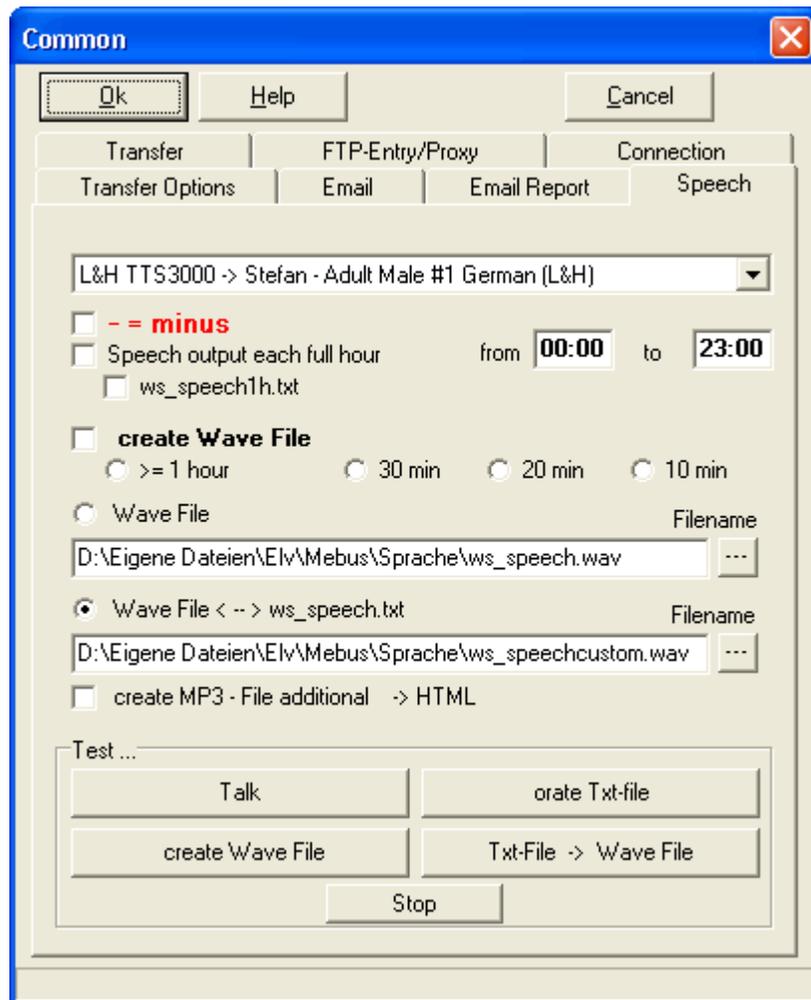
### Caution!

The creating of a **WAVE-file** (and/or speech) lasts exactly for so long, as now the later speech!

**Who means here, to get all minute a WAVE file with a speaking-duration of 2 minutes length - a „corrupt or empty Wave file“ receives as a result**

**-> the program breaks a possibly prior voice request system-induced at beginning of a new voice request = also WAVE-file-generation!**

Exception: In the case of hourly voice output and simultaneous **Wave-file-generation** the corresponding event waits - per anything first was begun - for the termination and this function executes then.



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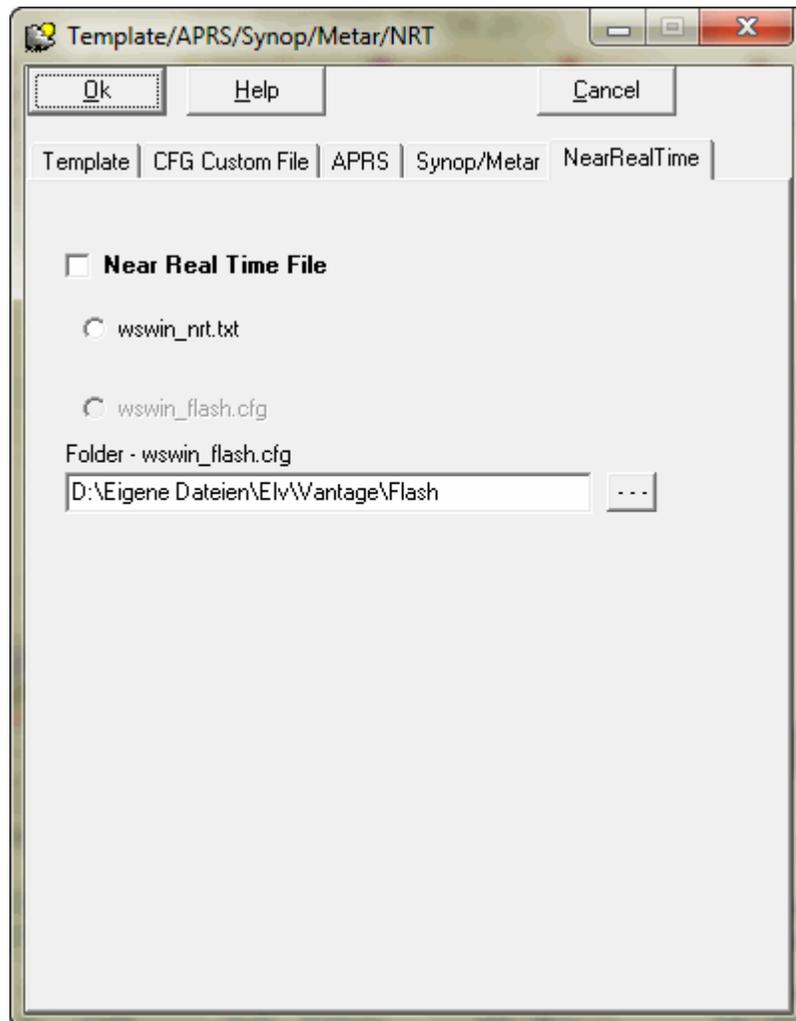
# Near Real Time (NRT) - Flash

Activation of the processing for Near Real Time - file and/or. for [flash representation](#).

The first control file must be called **wswin\_nrt.txt**.

It is executed as soon as a new value of the [weather station](#) (WM918, WMR9x8) occurs.  
At the other stations and [file watching](#), if a new data record is stored.

[Wswin\\_flash.cfg](#) is planned for future strengthening by [flash-representation](#) with [WsWin](#).

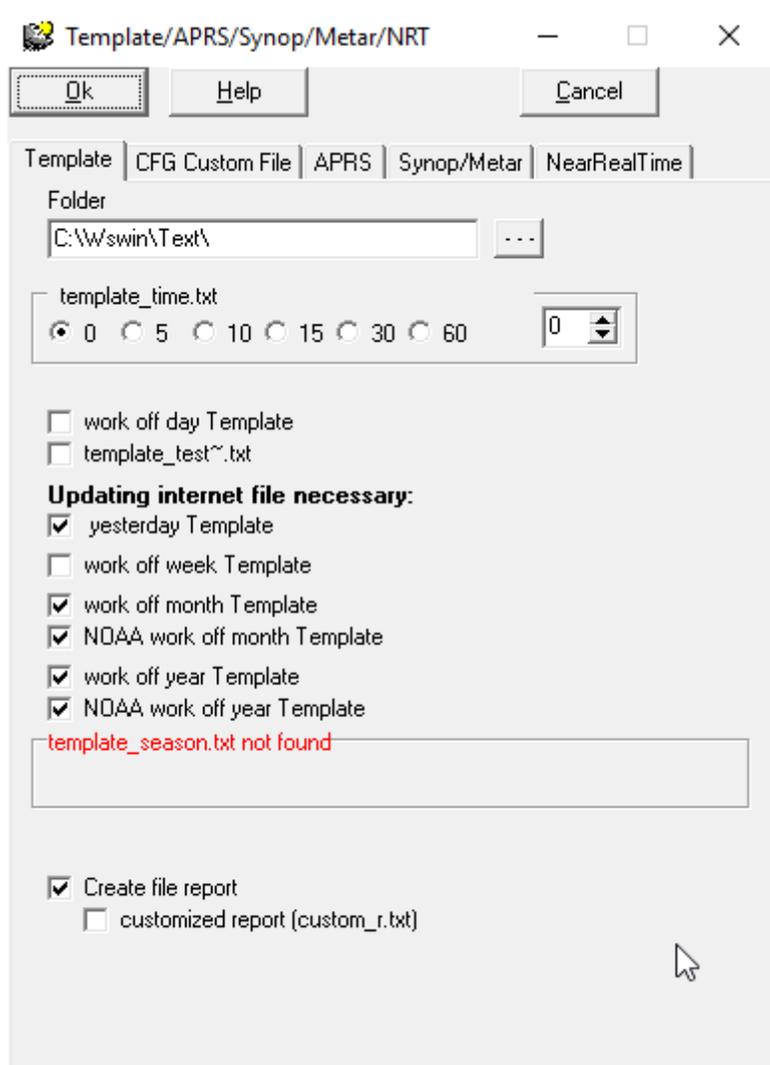


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# Properties for Template/APRS/Synop/Metar

If you want to work with Templates, you must activate the corresponding functions here.



## Folder

Target folder for not "htm/html"-files - the **htm/html-files** are stored always in the **HTML folder**.

Template Control files:

Time            template\_time.txt

This data file is always executed in accordance with the chosen time. except if chosen 0!

An offset-time of maximum chosen time minus 1 minute, for example 10 minutes: Offset 0..9 minutes possibly.

Test	template_t.txt
Day	template_d.txt
Yesterday	template_yest.txt
Week	ttemplate_w.txt
Month	template_m.txt
Month NOAA	template_noaa_m.txt
Year	template_y.txt
Year NOAA	template_noaa_y.txt
Season	template_season.txt

If the corresponding "control files" are not available, the function can not be activated.

The test template is planned to the "TESTING" and therefore the carrying out is always possible (natural only when **template\_t.txt** available).

The template files must be in the **data folder**.

For the necessary and/or particular variables for Templates look at [Variables](#)

### ***Difference between Template-files / customised Html/Wml-file(s):***

The template file is a extended customised Html/Wml file, all variables of the customised Html/Wml-file are supported, except for **%openfile= %** - that is a nesting of template files is not planned, here are additional variable possible.

You need template files, if you want to represent **all dates** of a **day/week/month/year** – customised Html/Wml file can only represent **the last data record** of **day dates**.

If the variable **%templatebegin%** is missing in the template file, then it is a normal customised Html/Wml file.

The **first NOAA template files** generate **firm output files** (also when other defaulted):

**Year** noaaYYYY.txt           for example noaa2002.txt  
**Month** noaaYYYYMM.txt       for example noaa200201.txt

The **%templatebegin% - variable** must stand at the beginning of a "line". It ends automatically with beginning of a new line:

Example:

%justify\_on%%hour\_only%           -> Control variable for output formatting

**%templatebegin%** %ws\_time%%curvaloutstemp%%curvaloutshum%%curval[33]%%curval[43]%%curval[44]%%curval[34]%

Result:

19:01	7.5 °C	94 %	1020 hPa	6.6 °C	4.3 °C	0.0 l/m <sup>2</sup>
20:02	7.2 °C	95 %	1020 hPa	6.5 °C	5.3 °C	0.0 l/m <sup>2</sup>
21:02	7.0 °C	95 %	1020 hPa	6.3 °C	5.0 °C	0.0 l/m <sup>2</sup>
22:02	6.8 °C	96 %	1020 hPa	6.2 °C	5.6 °C	0.0 l/m <sup>2</sup>

...

Peculiarity **Template\_Season:**

If as well as this Template is worked off, the execution of other internet-data files (also Templates) is put back.

Possible post-times from 00:05 to 23:49

# CFG Custom File (wswin\_customfiles.cfg)

With utilization of this ControlFile, you have the possibility your entire user-defined data files independently from the variable **%openfile=nextFile.txt%**, to steer, and controls.

You have also the possibility here to alter this data file to be in the habit of and that the program builds this data file automatically from your present data files:

Therefore the option "wswin\_customfiles.cfg active" must not chosen and the option "Update: wswin\_customfiles.cfg" must be chosen!

**Caution!** If you leave this setting-window menu and then call again after it or finish the program, this option is deactivated automatically!

After activating, you should

- **Update Internet files**
- **Customised Html/Wml-File(s)...**
- **all Template File (in the corresponding view)**

execute.

Build-up of the ControlFile:

1) Startname = Section-name

The section-name is firmly pre-determined and is one of the possible start - file names

2) number data files (with 0, no data files are worked off) as well as the control file is off turned!

3) Files

**with what the first data file always must be identical with the start-name and also must exist, otherwise, the entire section is ignored!**

If a semicolon is after the "=" and before the file name, this data file is ignored, however must be **with-considered** in the number!

Example:

```
[custom.txt]
```

```
#=4
```

```
1=custom.txt
```

```
2=custom_.txt
```

```
3=;schnee.txt
```

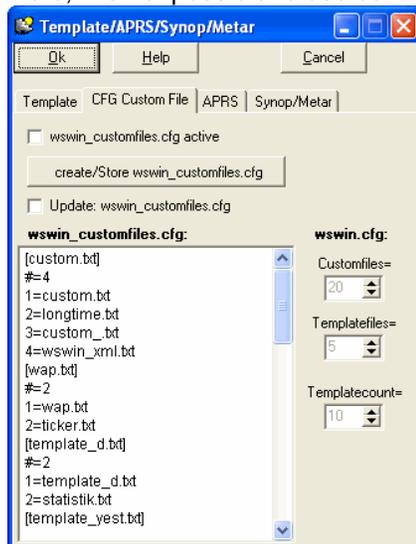
```
4=statistik.txt
```

If you steer the working off over the **wswin\_customfiles.cfg** (option active) all "**&open...**"-Variables in the data files are ignored. As tip: nevertheless still use these variables, you can then choose easily between both possibilities and can let "built" the control data file also again with it.

The actual number of the working-off data files per type becomes over the wswin.cfg controls and must be fitted possibly then the here used number at the number there! (Caution! custom.txt + wap.txt together max. 255)

Disadvantage of the utilization over the control over the "wswin\_customfiles.cfg":

Here, it is not possible to use control-data files dynamically: construct the file names with variables.



# APRS

With that, you have possibility to create automatically a preassembled data file for the packet broadcast and/or also for Citizen Weather Observer.

## 1013.2 hPa (mbar) --> b10132 ( X b0132 )

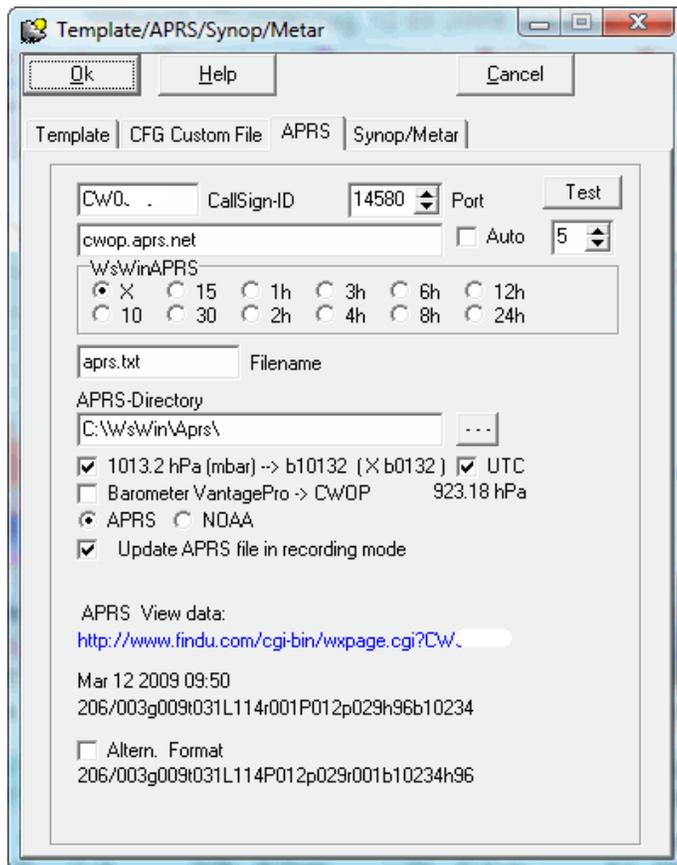
With selection of this option the complete air pressure is used  
– **default is: a leading "1" is cut off**

## UTC

Who needs the times in the standard time format (Computer time), can here, through deselection of this option, that achieve.

## Barometer VantagePro -> CWOP

CWOP expects usually the air pressure as Altimeter air pressure (without temperature-/humidity correction). With this option the VantagePro air pressure is back-calculated on this value!



## WsWinAprs

If you want to send data to APRS/CWOP, ask for a 'unique "CWxxxx" identifier' = CallSign-ID under [http://www.findu.com/citizenweather/cw\\_form.html](http://www.findu.com/citizenweather/cw_form.html)

You can then send the data with **WsWinAprs.exe**.- just activate here the time to send.

It necessarily an internet connection too.

Normally the server is selected automatically, if you want to pretend a "solid" one, you bring in this server with port-number and disable the option "Auto".

# Synop/Metar

## Synop File (synop.txt) create

With selection of this option here, in recording mode every hour (59. minute) a "synop.txt" file in the chosen SynopMetar directory is created.

### File Store

the file additional is stored as synop\_ddhh00.txt (example synop\_062200.txt).  
The times are UTC.

**Soil sensor:** Set set under Special sensors the correct soil sensor +5cm !

With the button ."synop.txt" you can manually produce the file.

If you require a certain point in time for it, you put the view – so absolut previously stops the recording - in accordance with the desired point in time (UTC-Time heed).

## Metar File (metar.txt) create

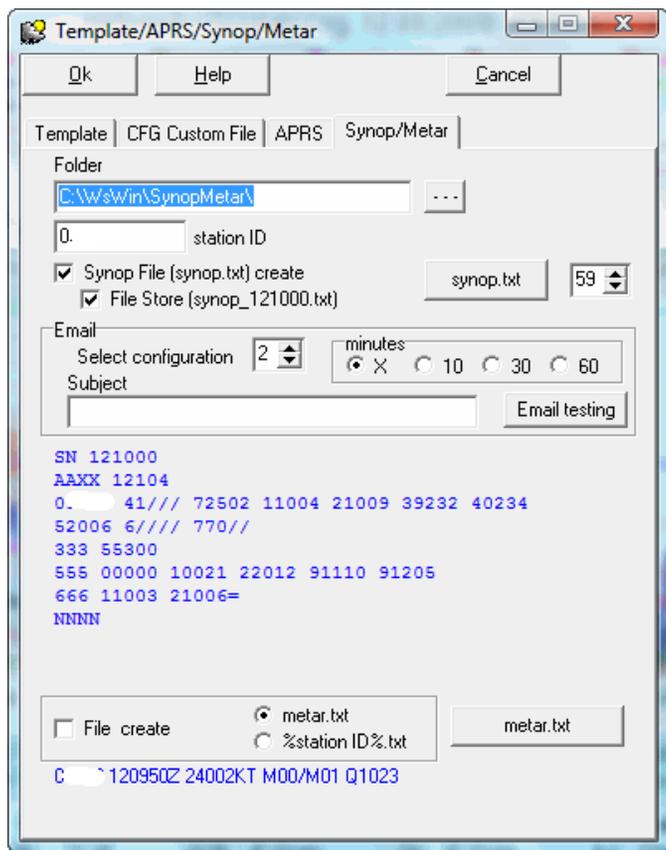
With selection of this option here, at storage of a new data record (recording active) a "metar.txt" file in the chosen SynopMetar directory is created.

With the button "metar.txt" you can manually produce the file.

**Caution!** If no data are entered under Station-ID, the program places for it "/////" as Station-ID in the files.

If you want to send Synop email, select the configuration to be used and the time.

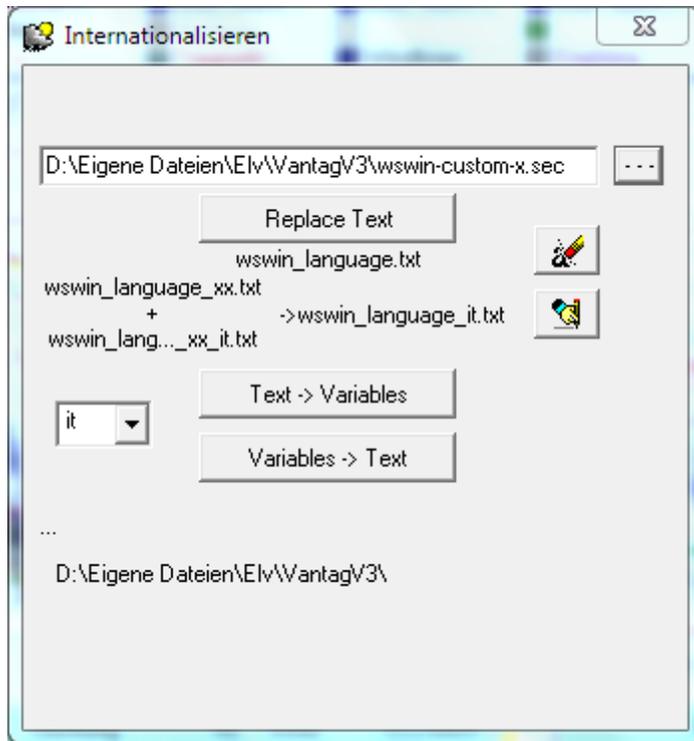
If you don't input any text in Subject or with the Subject as last sign one "+" adds, the program supplements the Subject with Synop-Sign. here it would be Synop SN in 141700



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# Internationalize user files



With the button "...", one selects the user file, which is to be translated - here **wswin-custom-x.sec**. If the file **wswin\_language.txt** exists, you can start the exchange with "Replace Text". The generated file gets the new name "**wswin-custom-x\_it.txt**"

→ „it“ according to what is set below.

A translation line from **wswin\_language.txt**: "strongly increasing<:>fortemente crescente"

With the button "**Text -> Variables**" the file **wswin-custom-x.sec** is searched for texts, which Wswin uses internally as a resource itself and if such a text matches, the corresponding Resource variable **%r[x~nnnn]% -> x: 0..6 = language, 9 =used language, nnnn = number 1 ... 4799** will be inserted:

Example: "**process year template**" will be replaced with **%r[9~4615]%**

The file **wswin-custom-x\_xx.sec** is generated

It is problematic here with short words, since no sentence context is examined or can be.

By the way: the existing resource words can be printed out in a file

by double-clicking on "**wswin\_language.txt**" - the file **wswin\_resource\_it.txt** (with "it" set) is generated.

With the button "**Variables -> Text**" the variables found in the file **wswin-custom-x\_xx.txt** **%r[x~nnnn]%** replaced by the resource language text according to the setting - here "it".

Approach for internationalization:

- 1) the option "Text -> Variables" -> **or one generally uses only the translation file wswin\_language.txt - then this is not necessary**

Control the file for which texts no variable is/was inserted.

insert/translate these texts into the file **wswin\_language.txt**

- 2) with original file "Replace Text" (using **wswin\_language.txt**)

The file **wswin\_language.txt** should be sorted by line length (longest first)!

- 3) again use the option "Text -> Variables" (see 1)

- 4) switch to another language (see 1)

- 5) Use "Variables -> Text" to convert the variables by the newly set language (see 1).

In the file check if something needs to be changed and adjust if it's necessary.

- 6) rename the last created \* \_en / fr / it /...- file to the desired user file

Sort lines by line length - since the translation file **wswin\_language.txt** should be sorted by line length:  
If you have Excel or the equivalent of Open Office:  
copy all texts into the first column, in the second column enter the formula =length(A1) -> for Excel.  
then copy this formula for all lines.  
Then sort after the B column  
then "copy back" the subsequently sorted rows from column A.

### **Customize to another language:**

The "eraser button" deletes the translated text from the translation file, so only then  
"strongly increasing<->" stands - so you can fill it with a "different" language.  
The new generated file will be: **wswin\_language\_xx.txt**

The contents of this file translate now e.g. Translate with Google (up to 5000 characters at a time)  
- with more characters than 5000, more translations have to be done  
and insert the translation result into a new file **wswin\_language\_xx\_it.txt** (here "it" for Italian).

In Wswin you choose the desired language - here "it".  
If now the desired files are present,  
the Pencil Button becomes active and you can create (in this case) the file **wswin\_language\_it.txt**.  
The file is of course still to be reworked, because e.g. Google for non-letters (for example!, \*, #)  
spaces adds.

In order to use it, you have to rename this file **wswin\_language\_it.txt** to **wswin\_language.txt**.

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## Reset all Units to ...

### **(°C,hPa,km/h,mm,m) metrical**

During this choice all sensors become metric unit representation adapted

### **(°F,inHg,mph,in,ft) US**

During this choice all sensors become US unit representation adapted

[Functions](#)

[Contents](#)

## Select standard config file

If you work with two configuration files, you can go back here to the standard configuration file (Wswin.cfg) again. During starting of the program the system generally works with the standard configuration file, except if the start of program was done with the **command line option "/config"**.

If there is a "chopping" before this selection, the Standard Config-File is employed currently.

[Functions](#)

[Contents](#)

## Select alternative config file

If you work with two configuration files, you can here switch to the additional configuration file (Wswina.cfg).

If a selection is not possible, the alternative-Config-file is not available yet.

The alternative Config file can be chosen also with a corresponding command line option during the start of the program.

If there is a "chopping" before this selection, than the currently employed Config file is the alternative config file.

If you would like to work with two different languages (for example German and English), you can manage this easily with the Alternative Config file.

[Functions](#)

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# Save alternative Config file

In order to work with two configuration files, a second configuration-file "**Wswina.cfg**" must be available. With this function you can store the current settings as an additional configuration and/or update them.

[Functions](#)

[Contents](#)

# Execute Ftp data transfer

**This function is only available with active FTP program!**

By calling this function the Ftp program with the corresponding options is started and the options exported correspondingly.

[Functions](#)

[Contents](#)

# Internet-Properties

## Common

### Location

The entry is displayed here in the Html table as the location.  
An **entry** here is **necessary** for the, [Functions "Create Html table"](#),  
["Create Html startpage"](#), ["Update Internet files"...](#) to work.

### Comment

Arbitrary text for display in Html-file.  
for example for position coordinates.

### Folder

In this folder the html-files are stored.  
The subdirectory "html" in the program folder of WSWIN32 is defaulted.  
For example: C:\Program Files\WsWin\html.  
This folder will be created, if it is not available yet !!

### Click directly on "Comment" and file "wswin\_xml.txt" is existing

When in this file variables without embedment in „XML“- code occur  
for example **Outside temperature %curval[0]% to look for**  
so the program generates a new file "**wswin\_xml\_mod.txt**" with the content of the **wswin\_xml.txt** and supplements  
pure variables with XML-Code: **(other text and additional variables are removed)**  
Result of the example: **<curval[0]>%curval[0]%</curval[0]>**

### Create updated data files in recording mode

When choosing this option the "Aktuell"-file(s) are being created after every weather data read in.

### not aktuell.gif

with that the creating the aktuell.gif file is decoupled in the current operating mode and with that the necessary  
displaying of the main window.

With this time values, however you nevertheless have the possibility (accordingly the chosen time 30 min 1h, 2h, 3h,  
4h, 6h, 8h, 12h) to let generated the aktuell.gif - with above-mentioned side-effect.

**This setting is applicable to the transfer options as well, if chosen there „not aktuell.gif"**  
[look here](#)

### 1 2 3 <-> Display

Construction of current-files according to the „View-Profiles"  
The profile-number is added to the filename.

**Example: [View-profile 2](#): produce File(s) **aktuell\_2.gif and/or 20060415\_2.gif****

If you want to generate the aktuell.gif during recording **in no way**, you need to activate „**not aktuell.gif**" and additionally  
at the time values the **"X"**

When you have chose „update [Internet files](#) automatic“, in spite of that an **aktuell.gif** -graphics-file becomes here  
creates!

### Update customised Html file(s) in recording mode

When choosing this option the statements and variables from the "custom.txt" are processed after every newly read  
in or saved weather data. See also [Variables](#).

With 0 5 10 15 30 minutes, you can choose that the updating of the customised files (custom.txt/wap.txt):  
always=0=default, only finished 5, 10, 15 or 30 minutes take place.

### Insert blanks between value and unit

Who would not like any "blank" in his customised Defined Html-pages between the value and the unit can realize that  
with deselection of this option.

Reasonable for example if one did not like, that the representation isn't broken from the browser at this blank. One  
can realize this too if one defines **the variable/value** with **<nobreak>%Variable%</nobreak>**.

## Update Internet files automatically

These options allow the automatic updating of all Internet files (table/graphics) for the year/month/week display. The updating occurs during the recording **around approx. 00:00 o'clock**, else **during the first start** of the program once a day or before a FTP transfer was started with "Command line options".

If the option "**do not update Start Page in this case**" was chosen the usual updating of the main file **Start Page** ("start.html") will not be done. -> for own modification of this file.

If the option "**do not update Start Page in this case**" was chosen, the updating of the main file "start.html" is not carried out -> necessary, for example, if one has adapted the start.html for his own importance and/or wants to carry out the changes themselves !

With **minutes offset** you can force the program to retard this updating around x minutes.

If you want to update not only once per day, picks right the Option "Actuality (hours)"

You can find the full description at "Update Internet files" ...."

## Table Head line – Table Foot line

Here you must/can enter your HTML code - necessary for those ones, with option optional Head-/Foot line in the tables.

Internet-Properties

Wunderground.com | wetterarchiv.de | AWEEKAS | WWW

Common | Start Page | HTML | Graphics | Graphics 2 | Sensors | current.html

Location: Lackenhäuser

Comment: 48° 45' 09" Nord - 13° 49' 08" Ost

t. Descr.: Aktualisierung nur am Wochenende - unter Tel. 08583/918583 können Sie die aktuellen Daten hören!

HTML Folder: D:\Eigene Dateien\EI\Wantage\Html\

WAP Folder: D:\Eigene Dateien\EI\Wantage\Wap\

create updated data files in recording mode

- not aktuell.gif
- 1  2  3 <-> Display

update customized Html files in recording mode

minutes: 0 5 10 15 30

Insert blanks between value and unit

update Internet files automatic

- do not update Start Page in this case
- update always after program start

minutes Offset: 0

aktuell.gif:  X  30 m  2 h  4 h  8 h  15 m  1 h  3 h  6 h  12 h

minutes Offset: 3

Actuality (hours):  24  12  6  3  2  1

Table - Head line:  table\_head.html

<table align="CENTER"><font size="+2"><b>www.pc-wetterstation.de</b></font></table>

Table - Foot line:  table\_foot.html

<table align="CENTER"><font size="-1"><b>&copy; 1999-2010 Werner Krenn</b></font></table>

Graphics (Mini-Display ...)

www.pc-wetterstation.de

©1999-2010 Werner Krenn - VantagePro2Plus

## current.html

### Create symbolic weather file in recording mode

When choosing this option every read in weather data are made out to "current.html" = stored weather symbolic file.

#### Show values besides in Bft at Wind

with that the wind rate and wind gusts in the weather symbolic file besides too to defaulted units the values in Beaufort Bft (Wind velocity) are shown.

#### Wind direction with corresponding graphics

The corresponding graphics (e.gif,n.gif and so on) are set at representation of the wind direction - else the standard graphic

#### Show air pressure trend values

besides to the air pressure changes of the last 6 h in the weather symbolic file, the air pressure trend value 24 h, 12 h, 3 h, 2 h and 1 h announced. If no value is available in the chosen representation (Standard measure day) for this period, then " - - " as value is displayed.

#### Show thermal stress

For the calculation of the thermal stress will be the same sensor used, which is also used for dew point showing. If a wind sensor is available, it will be included to the calculation, a cloud coverage is not considered.

For further information on the thermal stress index look at [Mini-Display](#)

#### Snow line

Shows the calculated snow fall line.

#### Cloud low limit

Shows the calculated cloud lower limit.

#### Show moon data

With that the age of the moon, the phase of the moon and the dates of the next full moon and the next new moon are represented.

#### Show sun data

With that, the dates of the sunrise yesterday, today, tomorrow and the sun transit today and the sunset from today are announced.

##### Show the date in the Windows-Format

The time-/date values are shown usually in a fixed format and text, with choice of this option these values are represented just the same as it was chosen in that in the Windows system control unit for the representation for Time-/Date.

#### Show state of sea

With that, one can for the lake-/sea resident, the state of sea let represent (according to Petersen).

#### Show last frost

Showing of the last current frost. these data are only shown if also valid data exist for it.

#### Statistics dates

If statistics dates (Ice days/Cold days/Summer days/Hot days) are available, these dates are represented.

### wswin-custom-x (.txt / .sec)

Enable generation of the special user file wswin-custom-x.html.

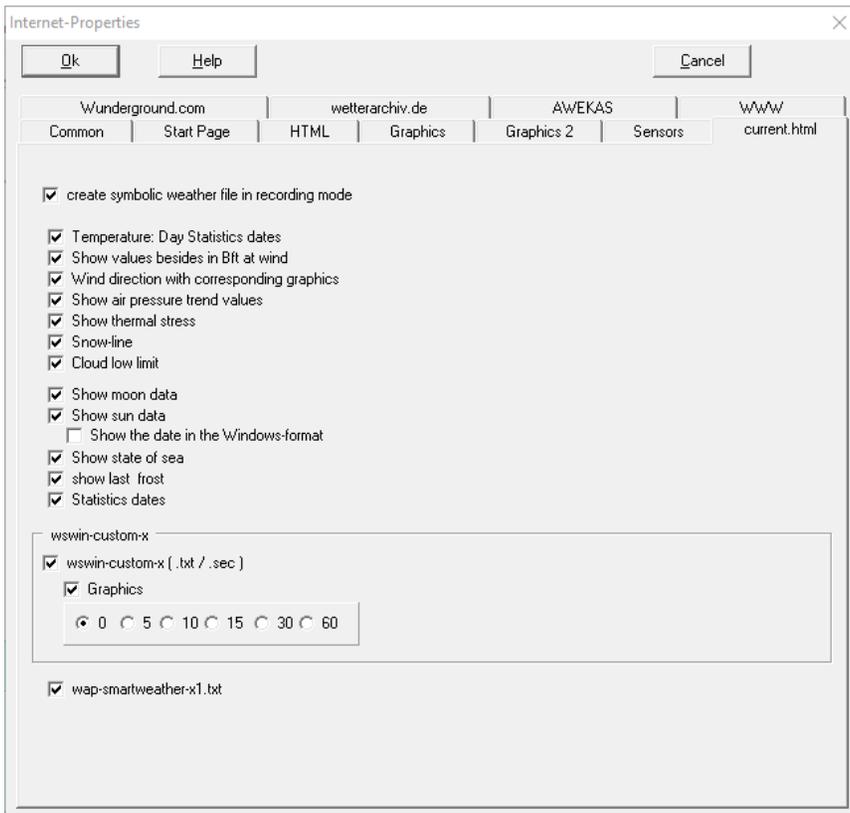
Provided by Matthias Krücke - thank you for that.

If both wswin-custom-x.txt file (unprotected) as well as a wswin-custom-x.sec file (protected) exists in the Wswin directory, the file wswin-custom-x.sec will be ignored!

The necessary graphics (included) are available under ./html/usericons!

If you do not want to create this file in the rhythm of storing of a new data record (setting 0) - because the processing takes a relatively long time - you can set it to be generated only every 5, 10, 15, 30 or 60 minutes - not possible settings are not selectable!

**This function is only available when using the metric units!**



## wap-smartweather-x1.txt

By activating this option, web pages are created, which can also be represented on a SmartPhone. If activation is not possible, the file wap-smartweather-x1.txt is missing in the data directory!

## wswin-custom-x.html - what it can do and how it works

This new file works fully automatically. Only the settings described in the info file (info-wswin-custom-x.txt) in WSWIN are to be made once.

If there are missing settings, an error code incl. Error analysis is displayed at the top of the HTML file, or an exact reference to the info file is given. There you can then read on the basis of the error code, where is the problem - and there is no need search a long or ask for this.

The new **wswin-custom-x.html** uses (currently) 2159 icons stored in the "usericons" file in 25 folders and subfolders (located in the html folder). Around 1800 icons are new or modified. A large part of these icons are animated gifs. For almost all measured values, a tendency is displayed: rising, falling, constant. The threshold values are designed differently depending on the parameters.

**Example solar radiation:** falling or rising tendency (arrow) usually not on the normal daily routine. That with 100% sunshine and rising sun in the direction of noon, a solar value increase is normal - and is not displayed as a trend.

**Example air pressure:** minimal changes between 1-2 measuring intervals are ignored. Only from 0.2 hPa change, a tendency is displayed. For striking pressure changes the color of the tendency arrow changes from black to red or even violet.

**Wind icons:** depending on the wind strength, the windsock reacts here. In a storm, the windsock also flies away and in the hurricane, the mast wobbles (something fun must be).

Wind direction icon: the wind direction arrow flashes from 6Bft - depending on the wind force it changes its color towards violet.

The **horizons visibility** is completely recalculated and also takes into account the visibility reduction against the sun - but only from a certain position on the sun. This will be displayed in brackets. The lower the sun is, the lower the visibility against the sun. In cloudy or cloudy skies the function is suppressed.

The visibility scale is a visual complement to the text output of the horizon sight.

**Sultriness:** Yes, is always very individual, why limits are also generous. In this calculation flows i.a. also the wind

speed, because the wind also has a cooling effect. As a result, the exhausted smoke value also largely depends on the measuring conditions of the wind meter.

**Garden moisture:** takes into account precipitation and evapotranspiration at different intervals (up to 10 days backwards), with different weights. Depending on the nature of the soil (sand or loam), the transitions are slightly different. It is assumed a normal planting depth for garden plants (10-20cm). Deep soil layers are not shown.

**Rain time scale:** the rainy season is empirically extrapolated and takes into account the measuring interval and rain gauge resolution - as well as real rainy weather sensors automatically. So it will also be detected modified rain gauge. The scale automatically switches between 24h view and today view. Depending on the set interval, both periods are displayed. The specified rainy season is still not literal - it is just calculated.

**Various warnings:** are only displayed if they are also acute.

Mini-graphics in the script: They give an overview of the last 12 months or 12 days. Especially the climatic. Water balance is becoming more and more of a focus after the last drought summer.

Minigrafics Sensor values: map the last 8 hours.

Climate labeling: have been significantly expanded.

Users who have checked for the new `wswin-custom-x` for the first time in the > Statistics > Settings > Calculate Evapotranspiration, should then recalculate the statistics for this year and for last year including the year file.

Recognizable in the Evapografik, if there only the / the month (s) from the installation date, with green bars are displayed - and the rest is missing. Without the recalculation of the statistics is also the graph / calculation of the climate. Water balance wrong.

**Example of the wswin-custom-x.html:**

Weather Overview - Lackenhäuser 848 m over NN						
date		Montag, 22. April 2019				
time		11:00 (-2h = UTC-time)				
<b>Station Weather</b> <small>(calculated)</small> ⇐ current weather trend ~ ~ ~ more weather outlook ⇒ currently mostly sunny ~ ~ ~ later cheerful ⇒ *unstable the wind is blowing from N-NE with 3-5 Bft → unchanged Temperature of the next 2 - 3h: between 15,9°C and 18,0°C  slightly rising						
<b>Temperatur Außen</b> <small>Graphics: last 8h (scaling: 5°)</small>		current <b>15,6 °C</b>		Min.:(03:10) <b>6,8 °C</b>	Max.:(15:08) <b>19,1 °C</b>	average <b>13,9 °C</b>
<b>Luftfeuchte Außen</b> <small>Graphics: last 8h (scaling: 10%)</small>		current <b>31 %</b>		Min.:(16:40) <b>18 %</b>	Max.:(02:45) <b>60 %</b>	average <b>34 %</b>
<b>Temperatur Außen 2</b> <small>Graphics: last 8h (scaling: 5°)</small>		current <b>15,0 °C</b>		Min.:(03:10) <b>7,8 °C</b>	Max.:(17:30) <b>17,8 °C</b>	average <b>13,6 °C</b>
<b>Taupunkt</b> <small>Graphics: last 8h (scaling: 5°)</small>		current <b>-1,5 °C</b>		Min.:(16:40) <b>-6,5 °C</b>	Max.:(08:45) <b>0,8 °C</b>	average <b>-2,3 °C</b>
<b>Temp. +5cm</b> <small>Graphics: last 8h (scaling: 5°)</small>		current <b>22,2 °C</b>		Min.:(03:05) <b>5,6 °C</b>	Max.:(15:54) <b>29,4 °C</b>	average <b>17,1 °C</b>
<b>Temp. -10cm</b> <small>Graphics: last 8h (scaling: 5°)</small>		current <b>11,7 °C</b>		Min.:(09:20) <b>10,6 °C</b>	Max.:(17:20) <b>15,6 °C</b>	average <b>12,6 °C</b>
<b>Luftdruck</b> <small>10 minutes tendency</small>		current <b>1009,9 hPa</b> ↓ -2,0 hPa/6h	Min.:(10:56) <b>1009,8 hPa</b>	Max.:(12:08) <b>1019,8 hPa</b>	average <b>1015,0 hPa</b>	
		-0,3 hPa/1h	-0,6 hPa/2h	-1,2 hPa/3h	-5,2 hPa/12h	-9,9 hPa/24h

...

<b>U. V. Strahlung</b> Graphics: last 8h (scaling: 1)		current <b>3,4 UV-I</b>		Min.(07:45) <b>0,0 UV-I</b>	Max.(13:30) <b>4,6 UV-I</b>	average <b>1,7 UV-I</b>																											
<b>Solarstrahlung</b> Graphics: last 8h (scaling: 100W)		current <b>681 W/m²</b>		Min.(06:00) <b>0 W/m²</b>	Max.(13:08) <b>780 W/m²</b>	average <b>326 W/m²</b>																											
<b>Windchill</b> (new formula) Graphics: last 8h (scaling: 5°)		current <b>15,6 °C</b>		Min.(02:25) <b>6,2 °C</b>	Max.(15:08) <b>19,1 °C</b>	average <b>13,8 °C</b>																											
<b>Windböen</b> Graphics: last 8h (scaling: 1 Bft)		current <b>30,6 km/h</b> (5 Bft)		Max.(09:40) <b>N-NE 35,4 km/h</b> (5 Bft)		average <b>15,4 km/h</b> (3 Bft)																											
<b>Windgeschwindigkeit</b> Graphics: last 8h (scaling: 1 Bft)		current <b>15,2 km/h</b> (3 Bft)		Max.(09:40) <b>NE 22,5 km/h</b> (4 Bft)		average <b>8,3 km/h</b> (2 Bft)																											
<b>Windrichtung</b>		<b>Fresh breeze with 3 - 5 Bft from NE</b> (strongly gusty)				dom. wind direction <b>N-NE</b>																											
<b>Blatt Feuchte</b>		current <b>0 lf</b>	Min.(11:00) <b>0 lf</b>	Max.(11:00) <b>0 lf</b>	average <b>0 lf</b>																												
<b>Boden Feuchte</b>		current <b>200 cb</b>	Min.(11:00) <b>200 cb</b>	Max.(11:00) <b>200 cb</b>	average <b>200 cb</b>																												
<b>calculated values without sensors/ID</b>		ThetaE (848 m) <b>32,3 °C</b>	Appar. temp. <b>10,5 °C</b>	abs. density <b>4,12 g/m³</b>	Airtight <b>1,1029 kg/m³</b>	Wind load <b>4,4 kp/m²</b>																											
<b>calculated radiation values without sensors/ID</b> (*Measured value with sensor ID)		Brightness <b>100 %</b>	Brightness lux <b>100,448 klux</b>	solar radiation* <b>681 w/m²</b>	UV radiation* <b>3,4 UV-I</b>																												
<b>met. temperature sums</b>		cold sum <b>179,3</b> (reference Temp. 0 °C)	heat sum <b>0,0</b> (reference Temp. 20,0 °C)	Growingtemp. <b>205,6 °C</b> (06.04.2019)																													
<b>swell</b>		<b>2/3 - smooth wavelets/slight sea</b>																															
<b>horizontview*</b> (calculated) sunny		<b>ca. 57 - 65 km</b>																															
<b>Visibility scale</b>		<table border="1"> <tr> <td>2-10 km</td> <td>11-20 km</td> <td>21-30 km</td> <td>31-40 km</td> <td>41-50 km</td> <td>51-60+ km</td> </tr> </table>					2-10 km	11-20 km	21-30 km	31-40 km	41-50 km	51-60+ km																					
2-10 km	11-20 km	21-30 km	31-40 km	41-50 km	51-60+ km																												
<b>Sunshine time today*</b> (as a percentage of the relative day length) (Hours of sunshine)		<table border="1"> <tr> <td>10%</td><td>20%</td><td>30%</td><td>40%</td><td>50%</td><td>60%</td><td>70%</td><td>80%</td><td>90%</td><td>100%</td> </tr> <tr> <td>1h</td><td>2h</td><td>3h</td><td>4h</td><td>5h</td><td>6h</td><td>7h</td><td>8h</td><td>9h</td><td>10h</td><td>11h</td><td>12h</td><td>13h</td><td>14h</td><td>15h</td><td>16h</td><td>17h</td> </tr> </table>					10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	12h	13h	14h	15h	16h	17h
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%																								
1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	12h	13h	14h	15h	16h	17h																	
<b>UV exposure</b>		UV-I <b>3,4</b>	<table border="1"> <tr> <td>very low</td> <td>low - easy</td> <td>easy - medium</td> <td>medium - increased</td> <td>increased - strong</td> <td>strong - very strong</td> <td>extreme</td> </tr> </table>				very low	low - easy	easy - medium	medium - increased	increased - strong	strong - very strong	extreme																				
very low	low - easy	easy - medium	medium - increased	increased - strong	strong - very strong	extreme																											
<b>Sultry degree</b>		<table border="1"> <tr> <td>very low</td> <td>low - easy</td> <td>easy - medium</td> <td>medium - increased</td> <td>increased - strong</td> <td>strong - very strong</td> <td>extreme</td> </tr> </table>				very low	low - easy	easy - medium	medium - increased	increased - strong	strong - very strong	extreme																					
very low	low - easy	easy - medium	medium - increased	increased - strong	strong - very strong	extreme																											
<b>garden humidity</b>		<table border="1"> <tr> <td>very dry</td> <td>too dry</td> <td>a bit too dry</td> <td>normal</td> <td>slightly damp</td> <td>good wet</td> <td>very wet</td> </tr> </table>				very dry	too dry	a bit too dry	normal	slightly damp	good wet	very wet																					
very dry	too dry	a bit too dry	normal	slightly damp	good wet	very wet																											
<b>clouds temperature</b>		<table border="1"> <tr> <td>&gt; -19°</td><td>-18°</td><td>-17°</td><td>-16°</td><td>-15°</td><td>-14°</td><td>-13°</td><td>-12°</td><td>-11°</td><td>-10°</td> </tr> </table>					> -19°	-18°	-17°	-16°	-15°	-14°	-13°	-12°	-11°	-10°																	
> -19°	-18°	-17°	-16°	-15°	-14°	-13°	-12°	-11°	-10°																								
Cloud base o. ground Snowfall liwith m. o. NN (calculated)		<table border="1"> <tr> <td>300</td><td>600</td><td>900</td><td>1200</td><td>1500</td><td>1800</td><td>2100</td><td>2400</td><td>2700</td><td>3000</td> </tr> </table>					300	600	900	1200	1500	1800	2100	2400	2700	3000																	
300	600	900	1200	1500	1800	2100	2400	2700	3000																								
<b>GLFI</b> (Grassland fire index 0-6)		<b>6.0</b> $\triangle$ <b>extreme Grass fire hazard</b> (calculated *)																															
<b>WBI</b> (Forest fire hazard index 0-6)		<b>6.0</b> $\triangle$ <b>extreme Forest fire hazard</b> (calculated *)																															
<b>precipitation</b>		last hours		<b>0,0 mm</b>																													
		today		<b>0,0 mm</b>																													
		last 24 hours		<b>0,0 mm</b>																													
		current week		<b>0,0 mm</b>																													
		current month		<b>0,0 mm</b>																													
		last month		<b>178,8 mm</b>																													
		April Previous year		<b>20,4 mm</b>																													

...

# Start Page (start.html)

## Period for Start Page

For the period here indicated files are searched for in the "weather data selection menu" and if found entries are carried out.

A period of 1980 up to 2039 can be set.

## Start page = Go Back Internet Site

During selecting of the **start page** in the Start Page "start.html" (or other selected file name) the system changes to this indicated Internet side!

## Years separate

With activating of this option all "Html/Graphics"- files, which are year specific (not currently files), in corresponding **year folders** stored.

The retraction of this option is only possible, if the program finds any "yearly file" in the actual "HTML - folder" (however, once apportioned files then must be back-copied per hand to the HTML – folder).

-> [apportioning takes on this program!](#)

## Start Page file name

Who needs another file name than "**start.html**", can change here the file name.

## Table URL or graphics URL

If your tables and/or graphics should be stored in different folders or, however, also on different servers, you can do the corresponding handicaps here.

This "folder names / URL" are prefixed before the table-/graphics entries while making the Start page ("start.html").

## Use tables/graphics URL

With this option one can control the use of the table URL and/or graphics URL.

Reasonable, for example, in order to be able to check the "start.html" on the local hard disk.

## Background picture and background colour for Start Page ("start.html")

Here one can default for the Weather selection menu (left frame) a background colour and/or. also some background graphics.

### Consider:

If you change the background colour, you should adapt also the arrow-graphics (6x6.gif, auf.gif, zu.gif) onto this background colour.

If you have entered background graphics, it is not checked, whether these graphics are available and/or. If this entry for this purpose is correct.

In a system-dependent way the background-graphics are privileged, if there are a background-colour **and simultaneously** some background-graphics.

## Create no week HTML tables

If this option is chosen, no Htm-tables are created for the calendar weeks, and are therefore not offered anymore in the "weather data selection menu". The graphics of the weeks are not influenced by this option however.

Background for this option: These tables require a lot of storage space that you do not need with this option.

## Create no month HTML tables

## Create no year HTML tables

If you don't want to let these tables generated or the tables are generated with "Template", here you can take into account this.

With the option **Template**, you inform the program that these tables are generated over Template.

-> Option necessary for the control/recognition when the month-/yearly-file must be updated.

## Create no week GIF-graphics

## Create no month GIF-graphics

## Create no year GIF-graphics

Option for weaker computers ...

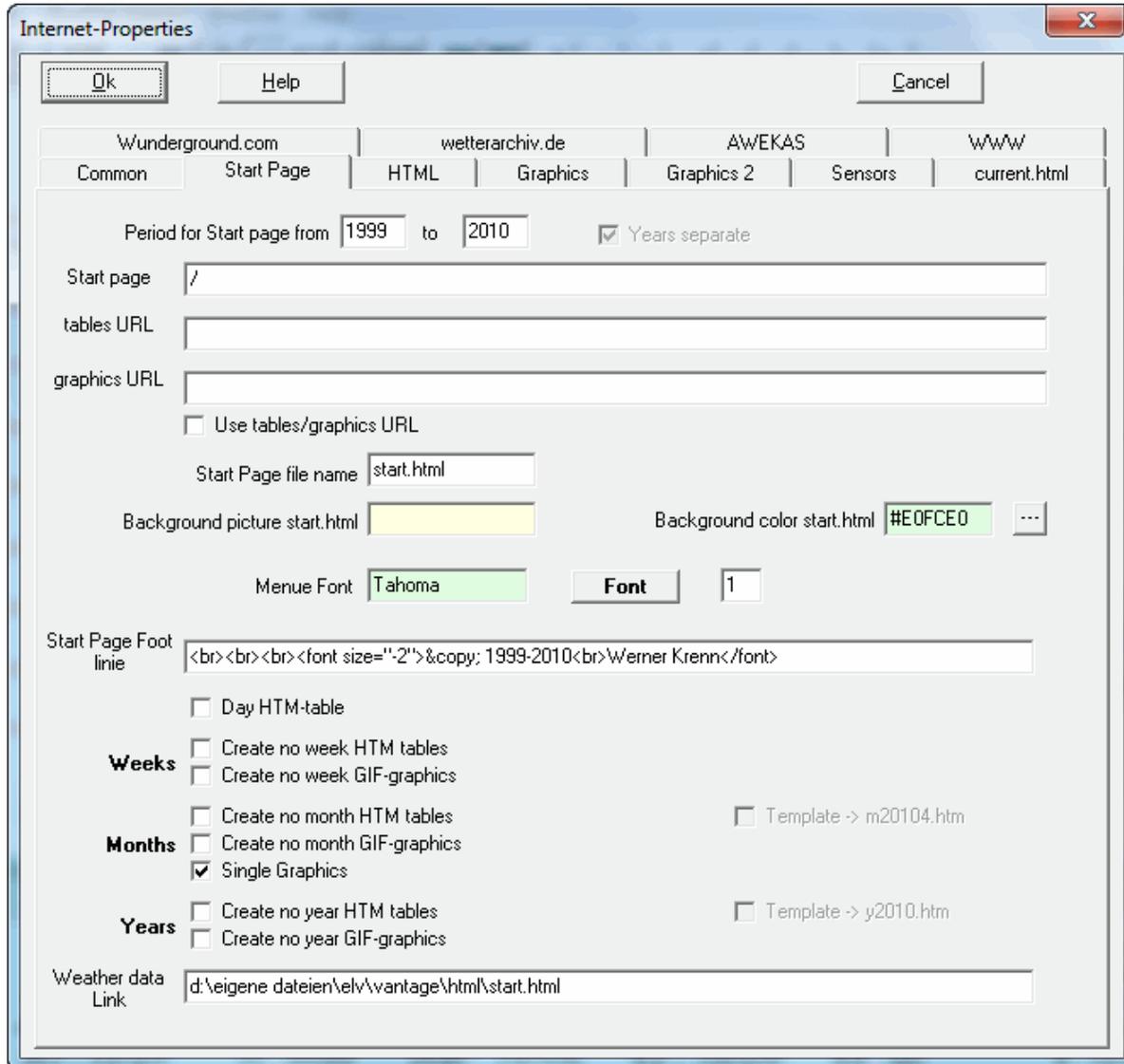
## Weather data Link

With that you can have the possibility over "**Weather data**" (Display bar) and/or in the menu under "**Internet**" "**Weather data Link**" to jump to a Html side/list or file directly.

Consider !

The entry must with [http://](#) , [file:///](#) or **C:**, **D:** ... begin. Otherwise this link is not acting.

That is, relative refers, as `..index.html` are not supported.



# HTML

## Font

In this font the Html-table is created.  
Default is **Arial**

## Font height

The Html-table is created in this character size.  
Default is **9 pt**

## Html table header colour

Background colour for the head- and/or. Min-/Max field of the table.  
Default is #dbdbdb =**silver-similar**  
The Netscape-browser V4.x may require adaptations here.

## Number of values in "aktuell.htm"

The number here chosen is created/displayed in the aktuell.html-table.  
Numerical values are possible from **5 - 120**, else please select **all**  
If "**hours**" are selected, the data are saved an hour after the current value.

## Show Wind in tables besides in Bft

Became for the wind rate and/or wind gust another unit than "**Bft**" (**Beaufort**) was chosen, so you can with this option in the tables additional to the calm unit (k.p.h., m/s, mph, knots), let show these values in "**Bft**".

## Create in tables with absolute humidity the relative humidity values too

Who chose as unit for the humidity g/m<sup>3</sup> = absolute humidity, also the relative humidity (%) can let represent with that besides.

## Create in month/year tables the min./max. values for each sensor too

So become per day in addition to the average value also the min./max. Values created with the corresponding time.  
Note that the table size enlarges itself considerably with that.

## Month/Year tables: Summary

If you would like for the month-/yearly tables a summary of the this maximum as well as the minimum values at the end of the table, so then activate this option.

**This option is ignored in the not registered version!**

## Minimum- and maximum values table -> Month/Year

Through selection of this option, there are with "create HTML tables" as well as "update Internet files" for [years](#) and [months](#) a HTML table generated with the minimum, maximum and average values for the under "HTML" - sensors selected measuring values.

The generated tables become also in the "start - menu" considers.

**This option is ignored in the not registered version!**

## Head-/Foot line

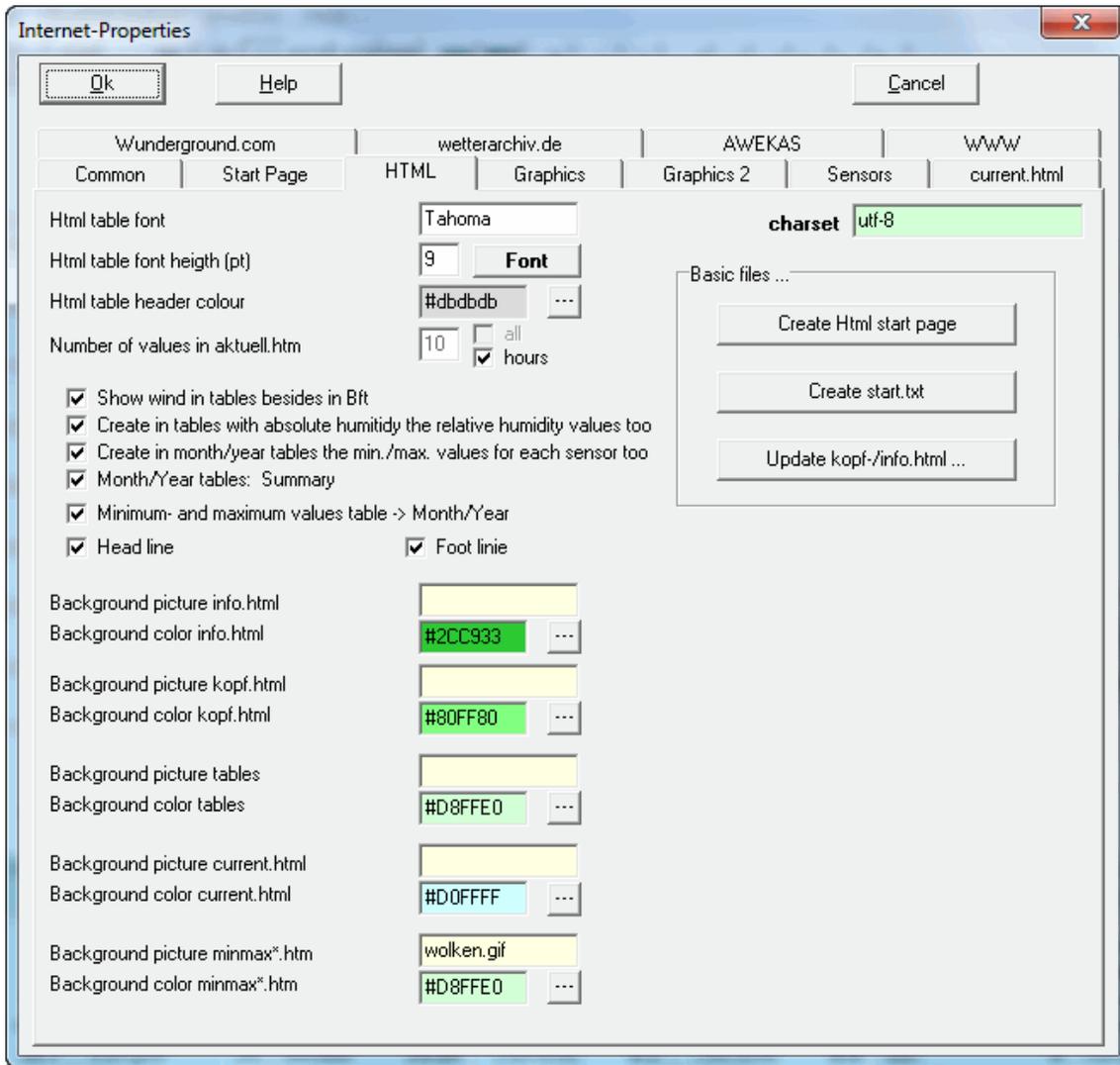
Who would like to insert his "own" Head-/Foot line in the tables, for example for copyrights, must activate the option here and under "**Common**" to bring the HTML code in the corresponding edit lines.

## Background picture and background colour

Here you can configure for the files "**info.html**", "**kopf.html**", "**current.html**", „**minmax\*.htm**“ and for all "**Htm-table-files** (Aktuell, Week, Month, Year) a background colour and/or a background picture.

If you have entered background graphics, it is not checked, whether these graphics are available and/or. If this entry for this purpose is correct.

In a system-dependent way the background-graphics are privileged, if there are a background-colour **and simultaneously** some background-graphics.



# Graphics

## Current graphics size

Here the graphics size (width x height) is displayed which the graphics diagram currently has. The height of the diagram size increases in case of displaying the values (Example) 92/73/41 pixel

- at current display with Min-/Max bar around 92 pixels
- at collective graphics display with Min-/Max bar around 73 pixels
- at single sensor graphics display with Min-/Max bar around 41 pixels

If the function **Show Internet Sensors** is chosen, the size of the current graphics is also shown in the left lower status

## Adjusting graphic size

With the graphics size displayed here (width x height) the Internet graphics are made! The actual height of the diagram is shown in the display of the values in brackets. Example: (532/513/481)

- at current display with Min-/Max bar: 532 pixels
- at collective graphics display with Min-/Max bar 513 pixels
- at single sensor graphics display with Min-/Max bar 481 pixels

The values displayed here **can not be changed**, except with the "Get graphic size" button.

If you always want to display the standard sensors (outdoor temp./ outdoor humidity / air pressure / wind speed /wind direction / rain) in the Min-/Max bar, at least a **width of 797 pixels is required**.

## Adapt Html graphics

Choosing this option is necessary in order always to represent the GIF-graphics with the same width.

The option is not selectable if no valid values are available yet at "Adjusting graphics size".

Although the browsers can handle the scaling of graphics, the quality of the graphics may suffers considerably. If you do not want the scaling to be carried out by the browsers you can do this with this function.

If this option is chosen and you close down with the **Show Internet Sensors** the corresponding display changes, so the graphics representation is set also to the defaulted graphics size. (check appearance of GIF graphics).

### + xx Pixel

If, while making the GIF graphics, the graphics are cut off at the lower edge, you can carry out here a correction.

## None Data ...

If no data (for example sunshine time) are available for certain sensors, also no graphics is generated for it. Whoever nevertheless would like this graphics, must activate this option.

## Barotrend.gif

It becomes generates a small graphics with the columns of the atmospheric pressure course last 24, 12, 6,3,2,1 hours & currently.

(same as in Minidisplay)

## Show wind direction in graphics + day + <> „.....“

-> forcible representation of the wind direction of day representation

If you picked also the "wind direction" for the collective graphics to representing, the wind direction is **only shown** in the day representation if you chose also "Points instead of lines with wind direction".

If you always **want to force** the representation with chosen "representation" of the wind direction, you can reach this with this option!

## Create Mini-Display in recording mode

With choice of this option the graphics "minidisplay.gif" are made during the recording after every storage of a new weather date record in the HTML-folder.

The minidisplay does not have to be represented for this purpose, the representation corresponds to the attitude that was carried out under "Mini-display". You can "adapt" also the size of these graphics here

## Create wind distribution graphic in recording mode

With choice of this option the graphics "ddis\_current.gif" are made during the recording after every storage of a new weather data record in the HTML-folder.

The representation corresponds to the properties that was carried out under "Wind direction".

At the weather stations WMR-918 and Weatherlink/VantagePro, one can choose, that for the wind force - graphics the wind gusts is drawn near

## Create mini graphics in recording mode

### #2 Create mini graphics in recording mode

With choice of this option the graphics "mini\_\*.gif" are made during the recording after every storage of a new weather date record in the HTML-folder.

For each sensor, an individual file is generated on that occasion.

Here can / must you manage also the default for the size of the mini graphics.

The size settings "**#2**" is for alternative mini-graphics (mmini\_\*.gif) for manual preparation intended.

With

- ✓ Day Graphics
- ✓ Create graphics for yesterday
- ✓ Create graphics for each week day
- ✓ Week Graphics
- ✓ Month Graphics

you can control the creation of "general" Graphics.

These graphics (exception day-graphics) are in the next "time period" (weekday, week, day before) again entitled.

### How do I get which mini graphics (?=sensor typ):

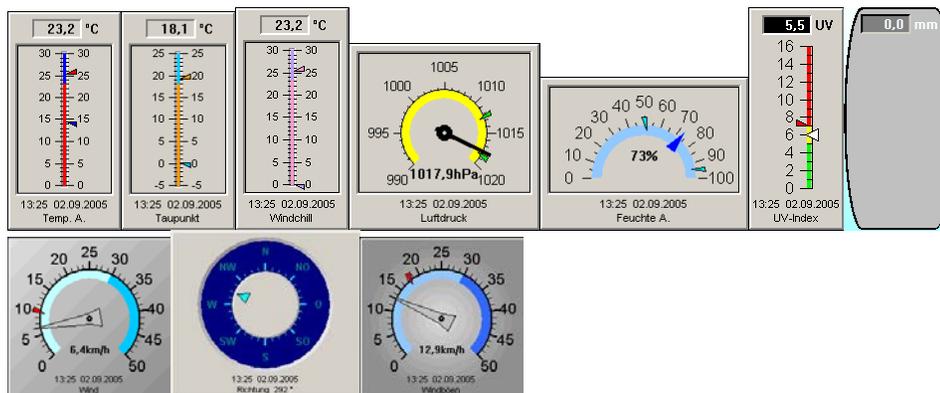
- Basic prerequisite „create mini graphics in recording mode“ activated
- mini\_current?.gif at Recording Create current files (under General as well as Transfer Option[Control])
- mini\_lijjmmtt?.gif Update internet file & Day Graphics
- mini\_dayx?.gif Update internet file & Create graphics for each week-day
- mini\_week?.gif Update internet file & Week Graphics
- mini\_wjjj\_ww?.gif Update internet file & Week
- mini\_mjjjmm?.gif Update internet file & Month
- mini\_yjjj?.gif Update internet file & Year

## Instruments create

Who would like such graphics files of the main-measured values can that activates here.

**Peculiarity:** these graphics are only generated, even if the production of the Aktuell.gif file is activated and in the same time-screen as the Aktuell.gif.

The program needs the main-focus on this view menu for the production of these graphics (as with aktuell.gif)



## Show Copyright

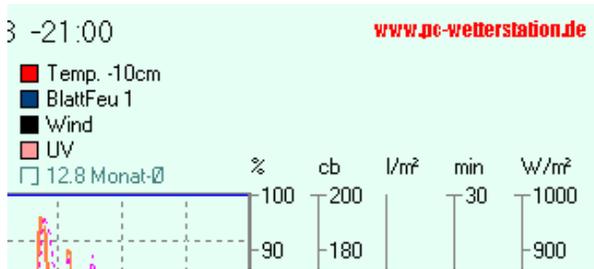
Who would like to "brand" the internet graphics, can activate it with this option.

The used text is with "**Graphics (mini display...)**" entered text.

The chosen Font color is also used for the info line with single-/mini graphics!

The font size is solid pre-determined with 8 pixels!

To "trying out" your attitudes, choose before "show internet sensors"



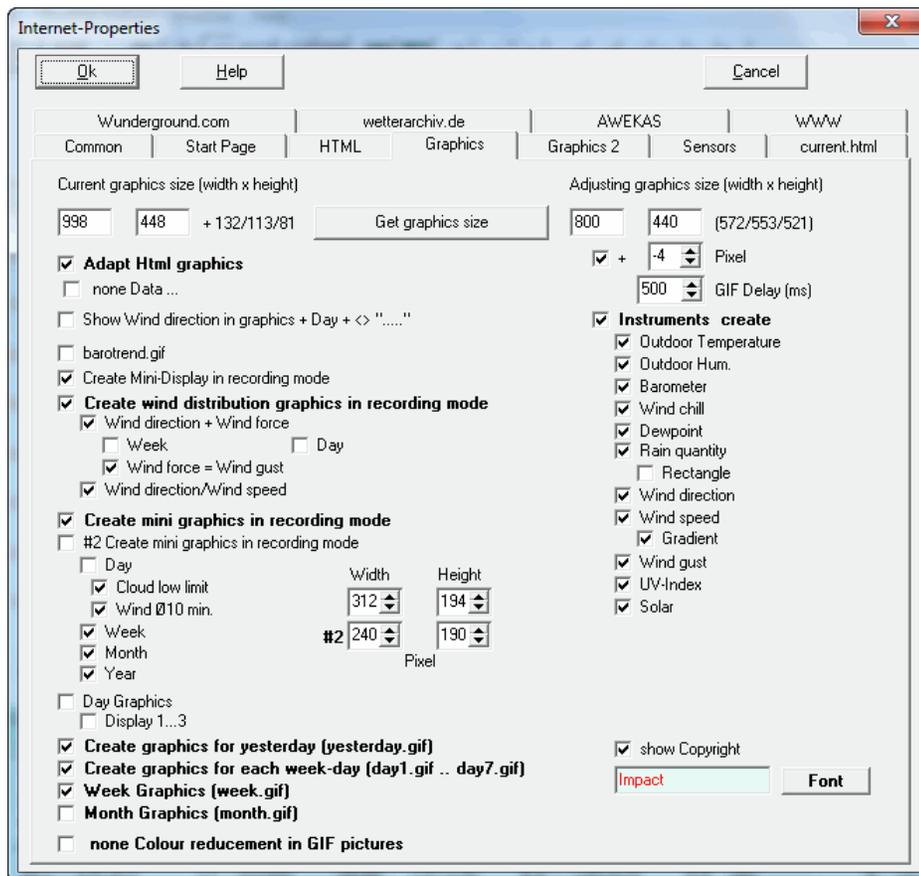
### none Colour reduction in GIF pictures

This option **must** be chosen with a **16-colors screen display**, else the stored GIF graphics show colour corruption. With a **HighColor (>8 bit) screen display** the colours are limited to 8 Bpp compulsorily (even if this option was not chosen).

**With showing of gradients, this option is switched off at the program-start!**

**Background:** the GIF-graphics can be saved with a maximum of 8 Bpp **colour depth**.

**Advantage of this option:** creating GIF-graphics occurs very much faster, in addition the file size of the GIF-graphics becomes smaller.



# Graphics 2

In addition here are setting options for the automatic producing of graphics.

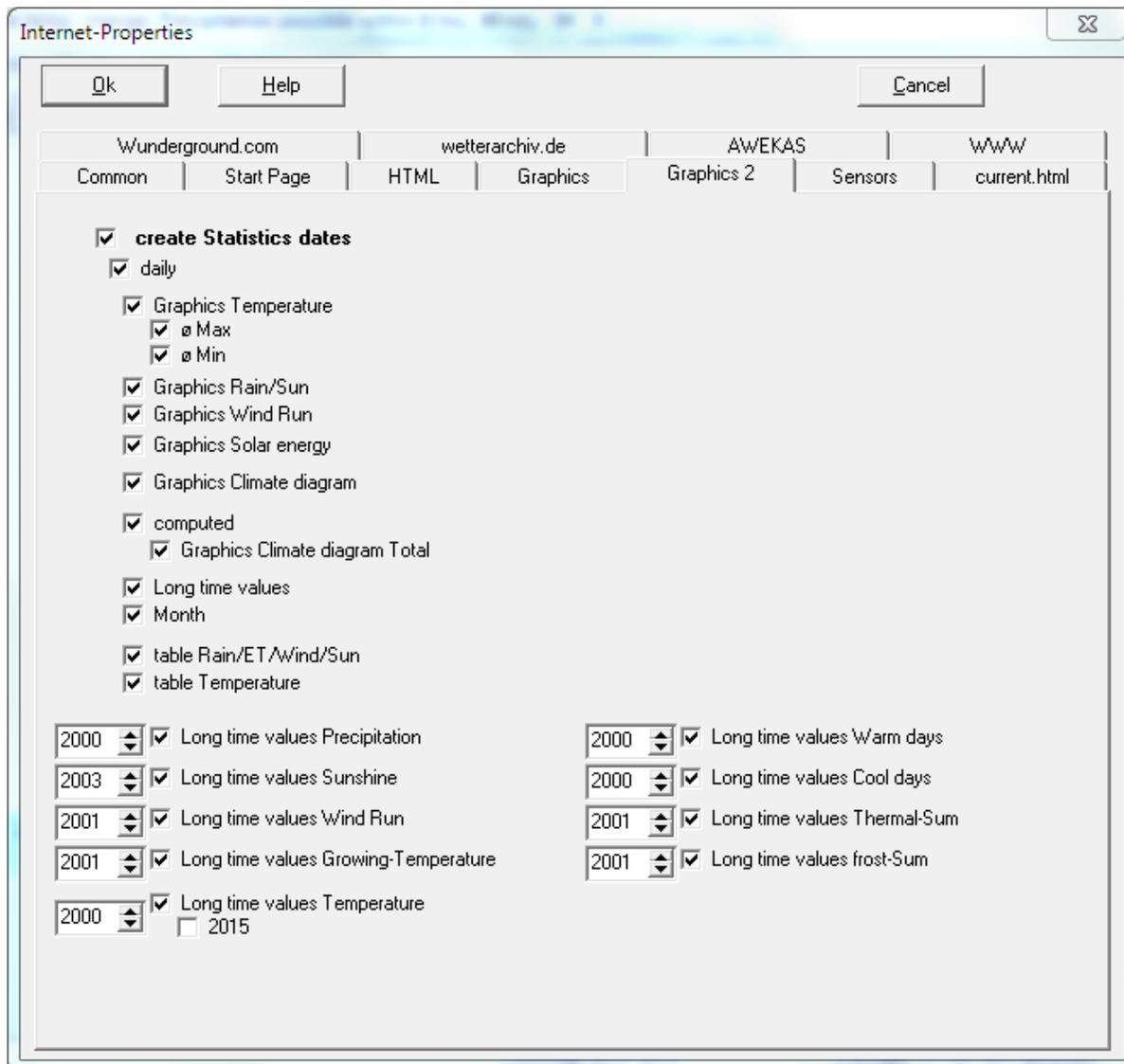
The „**Statistics dates**“ are produced automatic, when a new month has begun

→ 1x each month or manually with at Statistics dates

With the option "daily" this graphics are generated for you also at program-start and 1x after midnight or more (dependent on other settings).

For the long-time values, one can choose here, from which year the data are used for automatic generating.

With the long-time-temperature, one has the possibility not to let taken these data into account for the current year, because only at the 31. December 24:00 the correct long-current values for the current year is certain!



# Sensors

Here one chooses the measured values which are supposed to be performed in the Html-file (table/graphics).  
The following values are preset:

Sensor 1 and/or Outdoor Sensor. - humidity, temperature (mostly outdoor sensor)

Indoor sensor - air pressure

Wind sensor - Wind speed, Wind direction

Rain sensor - Rainfall

The **sensor 1** (and/or. **outdoor sensor** with Weather Station WMR-918) is always the reference for temperature and humidity in the weather data menu

If a sensor is displayed in bright writing, this sensor was not selected among Available Sensors, so, the values are not considered then either (also when selected).

**T**emperature **H**umidity **B**arometer:

That is main menu for sensor value/graphics to be represented in the field "Internet"

## # Grafik T H B: = Summary graphic

For the chosen sensors, a diagram line is generated in the summary graphics.

For the singles-sensor-graphics is still the selection under "HTML" responsible.

The selection is independent from the selection of "HTML"

For the wind direction, there is an additional option under "Graphics"

## Mini Graphics T H B:

Choice for which minigraphics sensors are supposed to be made.

## Min./Max. Year T H B:

Choice for which sensors to be supposed to be made Minimal and Maximal line in the year graphics.

## Speech:

Choice for which sensors a speech output is supposed to occur - at choice with customised Files not relevant.

See also under Speech

	HTML			# Graphics			Mini Graphics			Min/Max Year			Speech		
	T	H	B	T	H	B	T	H	B	T	H	B	T	H	B
Temp. 1., Hum. 1., Baro.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temp. 0., Hum. 0.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Temp. 2, Hum. 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temp. 3, Hum. 3	<input type="checkbox"/>														
Temp. 4, Hum. 4	<input type="checkbox"/>														
Temp. 0. min, Hum. 5	<input type="checkbox"/>														
Temp. 0. max, Hum. 6	<input type="checkbox"/>														
Temp. 7, Hum. 7	<input type="checkbox"/>														
Soil T +10cm, Leaf/Wetn 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Precip dect, Leaf/Wetn 2	<input type="checkbox"/>														
Leaf Temp 3, Leaf/Wetn 3	<input type="checkbox"/>														
Leaf Temp 4, Leaf/Wetn 4	<input type="checkbox"/>														
S-Temp +10cm, Soil Moistur	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil T -10cm, Soil Moistur	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil T -30cm, Soil Moistur	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil T -60cm, Soil Moistur	<input type="checkbox"/>														
Wind - Wind, Direction, Wind gust	<input checked="" type="checkbox"/>														
Rain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Dew point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wind chill	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sunshine time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
UV-Index	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Evapotranspiration	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ISS Reception	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Precipitation Time [Time]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

# Wunderground.com

If you want to use these functions, you need an Internet-browser and one Internet-entrance which already exists and/or is built up automatically.

## Sign up station and/or Manage Station

If there are no entries for Station-ID, Password and Email, you can enrol here directly with this button at "Wunderground.com".

If you have registered, please enter you data! After having done this, the "button" changes to a new function: "**manage station**".

You can then go directly to the configuration page of your registered station at **Wunderground.com** and can change your data and/or you can change to your own weather data.

## View Data

If the corresponding data (Station-ID, password) are available, you can control your current weather data directly with this function.

## Use local Wunderground URL

When choosing these options the **Wunderground.com**-sides are called directly in the language-specific version (here German).

## Station ID

Please enter your preserved Wunderground.com - Station-ID here.

## Password

Please enter your chosen entrance password for the Wunderground.com – side here.

Because I do not consider this password to be relevant for security reasons, it is not encoded.

## Email

When you want to manage your Wunderground.com - account with this program (manage station) you must indicate your email-address used for this here.

## UTC-Time

Wunderground uses for the administration of the times the UTC time (Universal Time Co-ordinated).-> corresponds to the time zone of the 0 ° meridian (Greenwich). The current local time is corrected around this value. For Germany this adjustment value is **-1** (-2 daylight time).

The adjustment value is taken from the windows environment.

## Clouds

Here you can choose your currently prevailing cloudiness degree -> according to the employed information in the flight meteorological service.

This choice is **not saved** and is reset after every start of program to "**Not specified**".

-> it serves currently only for the display at Wundergrond.com.

This choice is ignored if the function "**Transfer yesterdays hour data now**" is used.

## Conditions

Here you can enter your currently prevailing weather conditions.

This choice is **not saved** and reset after every start of program.

-> it serves currently only for the display at Wundergrond.com.

This choice is ignored if the function "**Transfer yesterdays hour data now**" is used.

## Transfer data every hour

With choice of this option and current "recording" the data are transmitted automatically every hour to Wunderground.com (consider conditions).

## Transfer data like FTP

With choice of this option the data are transmitted according to the choice under FTP (current 10 min, 30 min, 1 h, 2 h, 6 h, 12 h, 24 h) automatically to Wunderground.com (consider conditions).

## Transfer hour data now

By choosing this "button" the hour data of the shown View (only **day** or **week**) are transmitted to Wunderground.com. With the **value** behind the button one can cause a **delay** (default of 2 s) between the transfer of two data records.

The selection for "**Clouds**" and the input for "**Conditions**" are not transmitted .

### Reason:

Because with this function all available data can be transmitted - also from years back - you can assume that no data are available anymore from this **past time**.

## Transfer data now

By selecting this "button" the current data record is transmitted to Wunderground.com.

For ELV- wireless interfaces no value is transmitted for wind gust (unlike the Weather stations WMR-918).

Internet-Properties

Common Start Page HTML Graphics Graphics 2 Sensors current.html  
Wunderground.com wetterarchiv.de AWEKAS WWW

manage station View data

http://deutsch.wunderground.com

use local Wunderground URL

station ID INEUREIC1 password \*\*\*\*\*  show

email werner.krenn@t-online.de UTC-time -1

Clouds

- Not specified
- Clear (SKC)
- Few clouds (FEW)
- Scattered clouds (SCT)
- Broken cloud cover (BKN)
- Overcast (OVC)

Conditions

Transfer data each hour

Transfer data like FTP

Time controlling 2: Extra

Transfer hour data now 2

Transfer data now

use internal Internet-Browser

### Information for Windows NT 4.0 User:

This Windows version supports only a maximum of 255 signs in one line.

Therefore, it can occur, that the weather data don't reach "Wunderground" completely.

For Wunderground, specifically changeovers (from V2.73.3) were therefore done that the "clouds" as well as "weather conditions" are only cut off then.

"Wunderground" expects the data in a complete transfer line (with Url and data), therefore one cannot apportion at 2 "sendings" here.

# Wetterarchiv.de – Wetter.com

## Internet Update:

If you liked to send your current dates automatically to [www.wetterarchiv.de](http://www.wetterarchiv.de) so you can activate this here. At minutes offset you can „move“ the „Sending“ around the corresponding minutes:

for example 11 minutes offset and update 3h: so the dates at 00:11, 03:11, 06:11, 09:11, of 12:11 and so forth become „sent“

In the case of updates **24h** the dates are sent at **12:00 + offset-minutes**.

At the „Internet-Update“ no dates are sent for cloud, ceiling and so forth - therefore all dates that are to be preset by the user.

**With autom. Internet Update the dates are not stored in the „wsarchiv.mdb-database“!**

The screenshot shows the 'Internet-Properties' dialog box for the website 'mein.wetterarchiv.de'. The dialog has tabs for 'Common', 'Start Page', 'HTML', 'Graphics', 'Graphics 2', 'Sensors', and 'current.html'. The 'Common' tab is selected, showing the following settings:

- Account data mein.wetterarchiv.de:
  - Login: KrennW
  - Password: [masked]
  - active
  - show password
- Email: werner.krenn@t-online.de
- Homepage: http://www.pc-wetterstation.de
- ext. Browser
- Internet Update:
  - 1h (with a red 'X' icon)
  - 30m
  - 3h
  - 8h
  - 10m
  - 1h
  - 4h
  - 12h
  - 15m
  - 2h
  - 6h
  - 24h
  - minutes Offset: 0
  - 1h: 00:00 - 00:00

At the bottom, there is a button for 'mein.wetterarchiv.de' and the text 'Last report: 10:12 PM 1/19/2007'.

# AWEKAS

## Internet Update:

If you liked to send your current dates automatically to [www.awekas.at](http://www.awekas.at) so you can activate this here. At minutes offset you can „move“ the „Sending“ around the corresponding minutes:

for example 11 minutes offset and update 3h: so the dates at 00:11, 03:11, 06:11, 09:11, of 12:11 and so forth become „sent“

In the case of updates **24h** the dates are sent at **12:00 + offset-minutes**.

Should the program during the saving of a data record at the same time the „**awekas.txt**“ produce, so activate this option here.

## Fast link

You need an account at Awekas

= AWEKAS API V3 - the smallest transfer rate is limited to 1 minute!

Internet-Properties

Common Start Page HTML Graphics Graphics 2 Sensors current.html  
Wunderground.com wetterarchiv.de AWEKAS www

Account data awekas

Login   Direct Link  
Password   show password  
FastLinkKey

-> awekas.txt

Internet Update

X  5m  30m  3h  8h  
 10m  1h  4h  12h  minutes Offset  
 15m  2h  6h  24h

Fastlink 1h:  -

Last report: 22:12 19.01.2007

# WWW

Hereby, you have the possibility to send data to 3 different weather-services with help of a Template.

If also monthly-data are deposited in the Template, these data are also sent at month-beginning.

However, the 1. Template (and further) must used for this.

If the program find a setting with "active" not set, then the program didn't search for other template to be worked off.

Template 1 until 3 cannot be deactivated!

Example: Template number. 6 is not active, but Template number 7 is active: so the Template 7 will never be worked off!

This setting is only for search and work off of the templates.

Whether the Template is actually used, is set in the corresponding Template (active!)

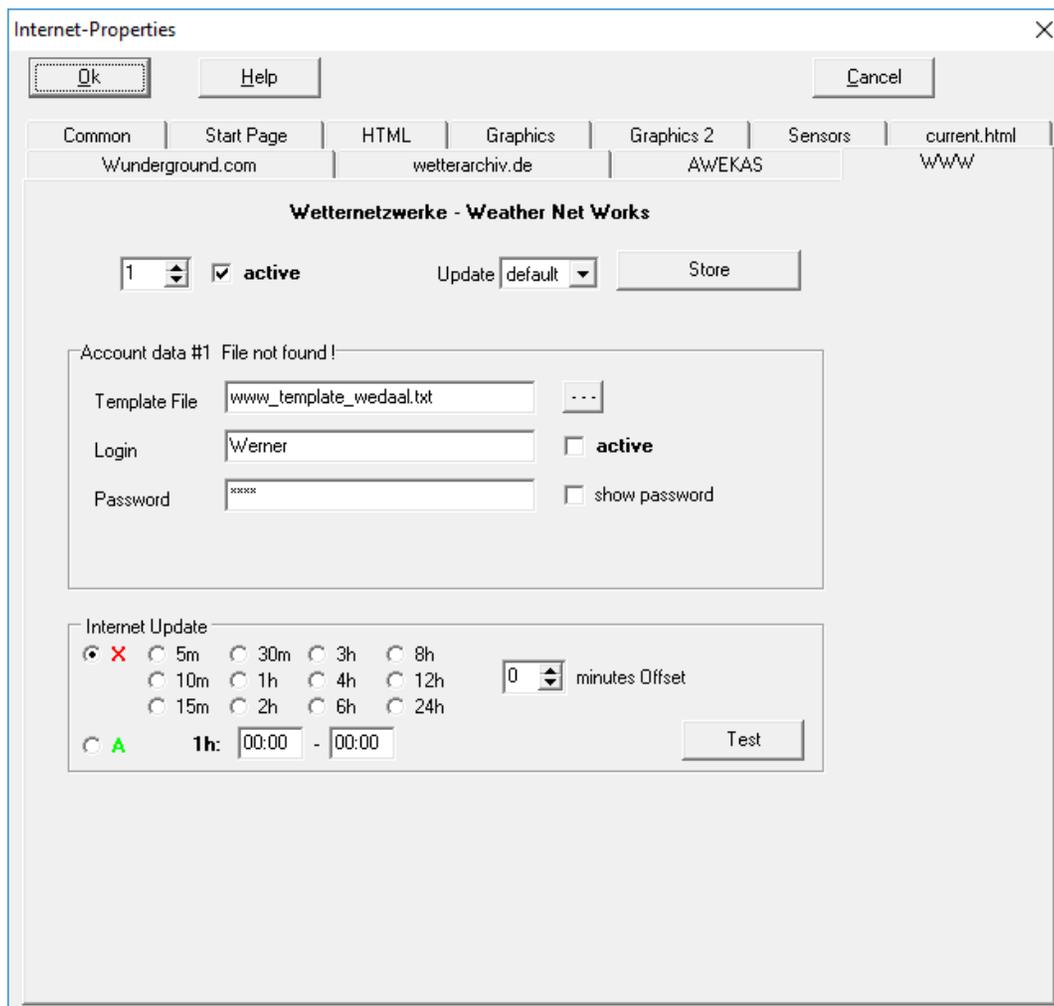
The Template should be made for you by the corresponding weather-service.

At minutes offset you can „move“ the „Sending“ around the corresponding minutes:

for example 11 minutes offset and update 3h: so the dates at 00:11, 03:11, 06:11, 09:11, of 12:11 and so forth become „sent“

In the case of updates **24h** the dates are sent at **12:00 + offset-minutes**.

During testing, only the currently selected template is "tested". Here in the picture it would be No. 1



Option A records the data after each new record is saved (Online operation or File-Watching).

## Template-Set Up

**0Info=Weather site service** ; this text ist shown as information at the Account data #1 ... #3  
**1Typ=0** ; at 1 and Url is set, the data are send via Http-post to the Url-address  
**2Url=http://....** ; with Typ=0 a file is created  
**3File=.html\awekas.txt** ; this file should be created if yp=0  
**4Senddata=?val=** ; only relevant with typ=1  
**5Separator=;** ; only relevant with typ=1 - default= ";"  
**6Unit=0** ; without/with units - default= 0 (without units)  
**7Userpw\_md5=1** ; send Password as MD-5 Hashcode - default = 0 also not encoded  
**8Success=OK** ; only relevant mit typ=1 – feedback from Server at success - if  
Debug Mode is aktic also in ws\_debug\_www.txt  
**9Version=1** ; to the differentiation which Template version is used  
**10MonthData=1** ; the Template contains also variables for sending at month begin  
**11TestUrl=http://....** ; this Url is used if the "Test button is operated, if not set then the data  
from2Url  
...  
**xBeginData** ; = Begin Data  
**from here, stand the variables as well as text for sending**  
**xBeginMonthData** ; = from here data for sending at month begin

Additional control file specific variables:

**%ws\_template\_user%**  
**%ws\_template\_pw%**  
**%ws\_template\_version%**

These values are "fillt" with the deposited data in the program as well as. directly from the Template  
If the option Userpw\_md5 is set, the password is sent as MD5-Hashcode (for example at awekas)  
The variables can stand only "alone" in a line.

In the Config data the 1Typ and (2Url or 3-file) and xBeginData are mandatory.

The other Config lines are optional.

If 11TestUrl isn't here, the data from 2Url are used - only relevant for 1Typ=1

Contains the Template also entries for monthly-data, 10MonthData=1 must be placed, the program then sends after monthly-change.

If the Debug Mode (bit 3) is set, everything is recorded in the data file ws\_debug\_www.txt.

The Config-lines are the same for all weather-portals (with modified content) ,  
the data-area are from the weather-portals (from the available variables).

With Typ=1 all the data are send in one string to the named Url

-> makes. Wetterarchiv, Awekas, Wunderground

Example:

http://www.awekas.at/extern/eingabe\_pruefung.php?val=userzy;0FA339BD0906BF31B30CE5F662D3A0F8;03.06.20  
07;13:39;16.7;74;1018.6;0.000;10.0;22;;;de;0;24.1;476;4.5;;0.87;21.1;0.00;wswin\_2.93.15

### Example: www-Template-Control-File

**0Info=Example for sendig without own web site**

**1Typ=1**

**2Url=http://www.sending.net/get.php**

**3File=.html\data.txt**

**4Senddata=?val=**

**5Separator=;**

**6Unit=0**

**7Userpw\_md5=1**

**8Success=OK**

**xBeginData**

**%ws\_template\_user%**

**%ws\_template\_pw%**

**%ws\_date%**

**%ws\_time%**

**%curval[0]%**

**%curval[-1]%**

%curval[33]%  
%rainday%  
%avg10minwind%  
%avg10minwinddir%  
wswin\_%ws\_vers%  
xBeginMonthData  
month;%ws\_template\_user%  
%ws\_template\_pw%  
%ws\_date%  
%ws\_time%  
%curval[0]%  
%curval[-1]%  
%curval[33]%

Functions

Contents

# Create updated data file ...

The file "aktuell.htm" can be created automatically during the weather recording - if the corresponding option at Internet properties 'create updated data files in recording mode' is chosen.

If this file is generated with the function "Create updated data files ..." , it differs in the feature with the automatically made file for the Internet browsers "update file display automatically"

Min-/Max displays occur only if more than 2 values are available !

For the Min-/Max values the available data of the currently selected period (Normal display= current Day or 24h display) are chosen.

## Rain amount:

In case of the rain display the difference between measured value and the preceding measured value is displayed !

In the average field the entire rain amount of the displayed period is displayed with a prefixed "#".

Min-values are not shown here.

The file "aktuell.gif" includes the diagram display of the chosen Internet sensors, in addition the "Displaybar" is displayed (only when displayed) and/or.

the Min-/Max bar.(when displayed also - has priority before display bar).

While drawing up the **aktuell.gif** the WsWin window is, if **minimized, brought to normal display t.**

If at the same time the table or Min. -/Max table are displayed, this window is closed and the WSWIN program window becomes the acting window.

After saving the files it is switched back to **previous representation.** -> graphics are a hard copy of the WsWin window!

If the "status window" is activated, no graphics are made - only table.

**Please consider also the Remarks in the file "info\_r.txt"** (only available for registered user).

## Example: **aktuell.htm**

**Weatherdata: current Montag, 02.10.2000 00:58**

Date	Time	Temp. O.	Hum. O.	Baro.	Rain	Wind	Direction	Direction	Dew point	Windchill	Wind gust
02.10.2000	00:58	55,0 °F	98 %	973 mbar	0,0 mm	4,3 mph	W	269 °	54,5 °F	55,0 °F	3,8 mph
02.10.2000	00:56	55,0 °F	98 %	973 mbar	0,0 mm	3,8 mph	W	275 °	54,5 °F	55,0 °F	4,3 mph
02.10.2000	00:53	55,0 °F	98 %	973 mbar	0,0 mm	0,0 mph	W-NW	284 °	54,5 °F	55,0 °F	3,3 mph
02.10.2000	00:51	55,0 °F	98 %	973 mbar	0,0 mm	0,0 mph	NW	310 °	54,5 °F	55,0 °F	0,0 mph
02.10.2000	00:49	55,0 °F	98 %	973 mbar	0,0 mm	0,0 mph	NW	310 °	54,5 °F	55,0 °F	3,3 mph
02.10.2000	00:47	55,0 °F	98 %	973 mbar	0,0 mm	0,0 mph	W	272 °	54,5 °F	55,0 °F	0,0 mph
02.10.2000	00:45	55,0 °F	98 %	973 mbar	0,0 mm	2,8 mph	W	272 °	54,5 °F	55,0 °F	4,3 mph
02.10.2000	00:43	55,0 °F	98 %	973 mbar	0,0 mm	0,0 mph	W	267 °	54,5 °F	55,0 °F	3,8 mph
02.10.2000	00:41	55,0 °F	98 %	973 mbar	0,0 mm	4,3 mph	NW	305 °	54,5 °F	55,0 °F	5,0 mph
02.10.2000	00:39	55,2 °F	98 %	973 mbar	0,0 mm	3,8 mph	W	277 °	54,7 °F	55,2 °F	3,3 mph
02.10.2000	00:37	55,2 °F	98 %	973 mbar	0,0 mm	0,0 mph	W-NW	299 °	54,7 °F	55,2 °F	0,0 mph
-	<b>Min-Time</b>	<b>06:51</b>	<b>13:03</b>	<b>20:25</b>	-	<b>01:12</b>	-	-	<b>01:30</b>	<b>07:17</b>	<b>02:07</b>
<b>Minimum</b>	-	<b>52.9 °F</b>	<b>54 %</b>	<b>973 mbar</b>	-	<b>0.0 mph</b>	-	-	<b>44.5 °F</b>	<b>49.3 °F</b>	<b>0.0 mph</b>
-	<b>Max-Time</b>	<b>13:17</b>	<b>18:51</b>	<b>12:24</b>	<b>17:47</b>	<b>13:15</b>	-	-	<b>17:09</b>	<b>13:11</b>	<b>13:13</b>
<b>Maximum</b>	-	<b>69.1 °F</b>	<b>98 %</b>	<b>977 mbar</b>	<b>1.0 mm</b>	<b>9.2 mph S</b>	-	-	<b>56.3 °F</b>	<b>68.7 °F</b>	<b>12.3 mph S</b>
<b>Average</b>	-	<b>59.6 °F</b>	<b>79 %</b>	<b>975 mbar</b>	<b>#3.0 mm</b>	<b>3.0 mph</b>	-	-	<b>52.4 °F</b>	<b>58.9 °F</b>	<b>3.6 mph</b>

[Functions](#)

[Contents](#)

# Create weather symbolic file ...

The file "current.html" can be created automatically during the weather recording - if the corresponding option in case of Internet properties, **create symbolic weather file in recording mode'** is chosen.

## Note:

The display of the weather forecast is standard only with the Weather Station WMR-918

Rain amount: In order for the rain amount to be computed correctly, the year display and the month display must have been chosen at least once before - comes about automatically if the option "update Internet files automatically" was chosen.

Example: **current.html**

weatherpage - Lackenhäuser 873 m over sealevel				
48° 45' 12" Nord - 13° 49' 12" Ost				
Date		Tuesday, October 03, 2000		
Time		11:45 AM		
Temperature Outdoor		current 52.3 °F	min. (04:42 AM) 50.7 °F	max. (02:49 PM) 62.4 °F
Humidity Outdoor		current 87%	min. (02:13 PM) 56%	max. (02:29 AM) 98%
Dew point		current 48.6 °F	min. (02:22 PM) 45.7 °F	max. (05:08 PM) 52.7 °F
Barometer		current 1018 mbar +2mbar/6h	min. (00:00 PM) 1009 mbar	max. (02:29 AM) 1018 mbar
Weather forecast		sunny		
Windchill		current 45.4 °F	min. (10:15 AM) 39.1 °F	max. (02:49 PM) 62.4 °F
Wind gust		current 6.8 mph	max. (10:29 AM) N-NE 18.9 mph	Average 4.2 mph
Wind speed		current 8.7 mph	max. (10:15 AM) N 13.9 mph	Average 3.8 mph
Wind direction		37° / NE		
Precipitation		last hour		0.0mm
		last 24 hours		7.0mm
		current week		163.0mm
		current month		114.0mm
		current year		2036.3mm
		Rain / Year		84 days
<small>The values are representing the Data of the last 24-Houral Barometre is corrected to sealevel!</small>				
<small>The Rain quantity are the Values since last Reset!</small>				
<small>© 1999-2000 Werra-Kamm-Technik-Handel - Weatherstation-Operation- and Data-Adjustment-Software V2.50.0</small>				

## File "current.txt"

In order to fit your needs directly for the "current.html", you take the current.txt, store it under

"custom.txt"  
and alter it according to your requests.

## Important!

As first line then should stand: `<!-- %customfile=custom.html% -->`

This file can completely replace the "`current.html`", all themselves amending values are preset by the corresponding variables already.

You must still deselect the option "`create weather symbolic file in recording mode`" and for that the  
Selecting option "`update customised HTML files in recording mode`".

**If the program determines, that you generates with `%customfile=current.html%` the `current.html`,**  
it deactivates temporary the option "`create weather symbolic file in recording mode`" for the further run.

[Functions](#)

[Contents](#)

# Create Html table

**For the call of this function an entry must be available under General - Location!**

By calling this function you can, for the chosen display type (period, day, week, month, year), create a corresponding Html table.

Available files, with the same name, are overwritten without prior warning !

Min-/Max values are not shown in these tables, if in the corresponding display period less than 2 weather data records are available !

The average value is the average of all data available in the chosen period.

For the rain amount the entire rain amount of the displayed period is displayed in the average field.

In the month and year display type, the rain days are shown at the rain amount in the field "Min date".

The files are filed in the folder which you chose in the menu "Internet-properties" "Html-folder".

If not entry was defaulted, so the files are filed in a subdirectory "html" from the WsWin program folder.

for example "C:\Program Files\WsWin\html"

File-name construction:

yYYYY	.htm	Year-Htm-table	e.g.:	y2000.htm	Year 2000
mYYYYMM	.htm	Month-Htm-table	e.g.:	m200003.htm	March 2000
wYYYY_WW	.htm	Week-Htm-table	e.g.:	w2000_10.htm	Week 10 Year 2000
YYYYMMTT	.htm	Days-Htm-table	e.g.:	20000331.htm	31.03.2000
YYYYMMTT	.htm	Period-Htm-table			

Aktuell-File:

aktuell .htm current weather data - table

[Functions](#)

[Contents](#)

# Create Html graphics

- Note that only the PC Wireless Interface supports up to 16 sensors

**The graphics file is a hardcopy of the displayed diagram - therefore a precise copy of the represented weather data window.**

For creating the "Create Html graphics" the **weather data window** must therefore be the **active window!**

For the display periods "**current, time, day, week, month**" collective graphics are created:  
All sensors chosen at "Internet-properties" are displayed simultaneously in the graphics diagram.

For the **month display** single sensor graphics are created additionally with Min-/Max display for all chosen sensors.

For the **year display** only single sensor graphics are made for all chosen sensors. With one option you can in addition display the Min-/Max values of the temperature sensors. With the wind speed the Max-values are displayed in addition.

If the Min-/Max bar is turned on, it is shown in the graphics too!

If the Display bar is turned on, it will be turned off before the graphics is created and after that it will be turned on again.

In the Start Page ("start.html") graphics are considered for almost all sensors:

**Only for single sensor display**

<b>Temperature</b>	Temp1 - mostly outdoor sensor
<b>Humidity</b>	Humidity1 - mostly outdoor sensor
<b>Air pressure</b>	Air pressure indoor - in the 1st inside sensor contain
<b>Wind speed</b>	
<b>Wind direction</b>	Graphics are created even if corresponding option was not set!
<b>Rain</b>	
<b>Indoor Temperature sensor</b>	
<b>Indoor Humidity sensor</b>	
<b>Temperature sensors 2 - 15</b>	<b>(Short Name)</b>
<b>Humidity sensors 2 - 15</b>	<b>(Short Name)</b>
<b>Dew point</b>	
<b>Wind chill</b>	
<b>Sun</b>	

- the air pressure sensors 10 - 15 are not considered in the graphics files!  
- in the diagram display and in the table files they are considered however !

## Interna:

When generating the "Gif - graphics" is simulated a keystroke.

Since only "white graphics" are produced with some **graphics cards** and used screen savers as well as power saving of the screen. The Screen saver should not be protected with a password!

Background: Graphics are Hardcopies of the diagram window.

Who uses the power save mode of the screen and WsWin permanently runs, furthermore the interval time of the wireless interfaces under the „asleep time" of the screen savers lies, so the monitor becomes no more in the power saving mode.

About nevertheless this power save - mode of the monitor, to be able to use, the following alteration of the "wswin.cfg" (as well as wswina.cfg) is necessarily in the section:

**[Html]**

Aufwecken=1 <- set this value to 0!

Html-graphics always are generated from the active Windows!

Therefore it is necessary, if this functionality is used, that the Weather station program is the active window or the Weather station program is minimized!!!!

Now there are two possibilities that the Weather station program always is the active window:

1) the program is minimized executed!

2) Option in "wswin.cfg"

in section

[Html]

ForceTop=1 <- set this value to 1 !

Altering of this value on "1" rescues following problem:

If some Client window of the program are active (for example printers chooses etc.), this window hides after generating the "current graphics" in the background, one possibly then must try the "hidden" window to find again!

Therefore everyone must decide for himself whether he wants to alter this "switch."

This switch is standard set from the version V2.30.1!!!

Graphics files: (gif)

yYYYYt .gif	Temperature-year-graphics	for example: y2000t.gif
yYYYYh .gif	Humidity-year-graphics	for example: y2000h.gif
yYYYYd .gif	Air pressure year-graphics	for example: y2000d.gif
yYYYYw .gif	Wind-year-graphics	for example: y2000w.gif
yYYYYwd .gif	Wind direction-year-graphics	for example: y2000wd.gif
yYYYYr .gif	Rain-year-graphics	for example: y2000r.gif
yYYYYdp .gif	Dew point year - graphics	for example: y2000dp.gif
yYYYYwc .gif	Wind chill-year-graphics	for example: y2000wc.gif
yYYYYs .gif	Sun year-graphics	for example: y2000s.gif

mYYYYMM .gif	Collective-month-graphics	for example: m200001.gif
mYYYYMMt .gif	Temperature-month-graphics	for example: m200001t.gif
mYYYYMMh .gif	Humidity-month-graphics	for example: m200001h.gif
mYYYYMMd .gif	Air pressure month-graphics	for example: m200001d.gif
mYYYYMMw .gif	Wind-month-graphics	for example: m200001w.gif
mYYYYMMwd.gif	Wind direction-month-graphics	for example: m200001wd.gif
mYYYYMMr .gif	Rain-month-graphics	for example: m200001r.gif
mYYYYMMdp.gif	Dew point month – graphics	for example: m200001dp.gif
mYYYYMMwc.gif	Wind chill-month-graphics	for example: m200001wc.gif
mYYYYMMs .gif	Sun month-graphics	for example: m200001s.gif

wYYYY_WW .gif	Collective-week-graphics	for example: w2000_02.gif
---------------	--------------------------	---------------------------

Current-file:

aktuell .gif	current weather data graphics
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[Functions](#)

[Contents](#)

# Save Distribution Wind direction

With that, one can store the current dates (day, month, year, current) as wind distribution graphics. Some GIF-graphics are made in the HTML-folder and/or posted. The file name is chosen automatically according to the view (day, week, month, year, current). The representation is in this case always the at last chosen „Display“ under "Wind direction".

Look for the properties of these graphics at "Wind direction"

Functions

Contents

# Save Mini-Display

With that can one - without the necessity **of the recording** - the current dates as a minidisplay store.  
A GIF graphics, File name "**minidisplay.gif**" in the HTML folder becomes created or posts.

For the options and of possibility of the minidisplay look at "[Mini-Display](#)"

[Functions](#)

[Contents](#)

## #2 Create mini graphics

Hereby you can let generate for the indicated representation time period (time, day, week, month, year) a alternative mini graphics.

You can set the size of graphics under „Internet“, „Adjustments“ Graphics.

Functions

Contents

# Save diagram graphics

With that function you can save the diagram for the shown display period (time, day, week, month, year), as visible on the monitor, as a GIF file.

The file names are chosen automatically - see "[Create Html-Graphics](#)" and/or "[Files](#)" - and should / can be renamed for your own needs.

[Functions](#)

[Contents](#)

# Update graphics/tables ...

With that, you have the possibility to bring your "files" onto the newest state.

The properties for "Internet-files" towards basis are placed.

With the "**Book**"-symbols can the post-time at ".Recordings-start" from the long-time-data or Beginning of the year directly is taken over.

## Consider!

To **Cancel** this function will not be done after "ok"-Button

The file names are selected automatical - look at "Create Html-graphics" and/or "Files".

If a corresponding Template file wasn't found, then the **Template option** isn't available (here template\_day.txt and template\_w.txt).

## Peculiarity:

With day updating becomes instead of **template\_d.txt** the Template file **template\_day.txt** uses (so that decoupling of current day values and general day values). Who doesn't require this, needs only its **template\_d.txt** - file copies to **template\_day.txt**.

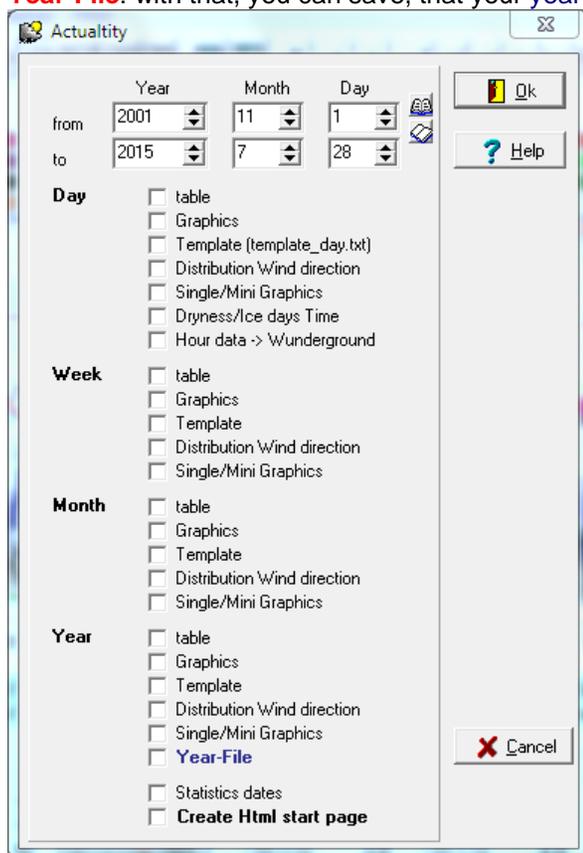
**Dryness Time/Ice days Time:** here all days are searched in the chosen period for the longest dry season and longest Ice period (Temperature under 0°C/32°F).

When you set before under Weather, **History** Dates your Longtime Values to „000, your historical information of these values are determined also again.

From V2.90.0 hereby also become the rain/h and the maximum air pressure-alteration/h scanned

**Statistics dates:** Possibility to update also the statistics-data (long-time-values).

**Year-File:** with that, you can save, that your year-files are current.



Functions

Content

# Create Html start page

**For the call of this function an entry must be available under General - Location!**

With this function you can create simple Web page for the available weather data (tables- and/or. graphics).

The tables are displayed on the right side in the middle frame, the graphics in the frame under that.  
The frame size for the graphics is designed in such a way, that with a screen resolution of 1024x768 pixels and display of the WEB Browser in the maximize mode, graphics with a width of 800 pixel are shown without additional width girder.

For the entry "**Weather Station**" a file "wstation.html" must be available. - planned for the presentation of the own Weather Station. - Is not created by this software.

For the entry **weather symbolic file** a file "current.html" must be available. This file can be created automatically by this software.

If a file "custom.html" is found in the HTML-folder, also an entry is made for this file in the Start Page ("start.html").

For a entry „**Instruments**“ a file "**instrumente.html**" must exist.

For the use, however, a Internet Browser V3.x (for example Microsoft, Netscape, Opera) is necessary.

Everyone can adapt the employed Java-script to his own needs.

For files, necessary for that, see under [Files](#)

## **CAUTION!**

This function is also executed if one under "general" didn't chose the option „**do not update Start Page (start.html) in this case**“.

## **Consider!**

If you uses a background color/graphic for the Start.html, adjust also the graphics "**6x6.gif**", "**auf.gif**" and "**zu.gif**" at this color!

## **Java-Script:**

The JavaScript comprises all commentaries of the Original-Authors.

The commentaries can become distant on wish (until copyright of the Authors!!).

Heed furthermore the spelling of the files in the Script and on servers:

auf.gif, zu.gif, 6x6.gif as well as also libSMBM.js=Javascript-file, (this file is not necessary on servers),

These 4 files must themselves in the chosen "HTML" -folder exist.

If no folder was chosen, the HTML folder becomes automatically a subdirectory from the WSWin-program-folder!

From the V2.61.0, the "Javascript" is expected in the data folder as well as if it is found in the Html-folder, it is postponed automatically into the data folder.

## **Caution!!:**

In the restricted version are only for **a part** of the existing files in the "start.html entries generated" - who doesn't let automatically update the "start.html" should notice this!

Since in the restricted version the "info.html & kopf.html" every time again is generated, in contrast to the full version - one should, after using the full version, these files singularly delete as well as the entries (restricted version) resolve!

# Weatherdata Selection

- [Info](#)
- [Start page](#)
- [Weatherstation](#)
- [weather page](#)
- [Current](#)

- ▼ Table
  - ▶ Weeks
  - ▶ Months
  - ▼ Years
    - [1999](#)
    - [2000](#)
- ▼ Graphics
  - ▶ Weeks
  - ▼ Months
    - ▼ 1999
      - ▶ [December](#)
      - ▶ 2000
      - ▶ Years

Location: Lackenhäuser 873 m over sealevel  
 48° 45' 12" Nord - 13° 49' 12" Ost

Weatherdata: current Tuesday, 2000-10-03 11:45 AM

Date	Time	Temp. O.	Hum. O.	Baro.	Rain	Wind	Direction	Direction	Dew point	Windchill	Wind gust
2000-10-03	11:45 AM	52.3 °F	87 %	1018 mbar	0.0 mm	8.7 mph	NE	37 °	48.6 °F	45.4 °F	6.8 mph
2000-10-03	11:43 AM	52.3 °F	85 %	1018 mbar	0.0 mm	0.0 mph	N-NE	18 °	48.0 °F	52.3 °F	0.0 mph
2000-10-03	11:41 AM	52.3 °F	86 %	1018 mbar	0.0 mm	12.3 mph	N-NE	18 °	48.3 °F	41.7 °F	5.4 mph
2000-10-03	11:37 AM	52.3 °F	86 %	1018 mbar	0.0 mm	0.0 mph	NE	43 °	48.3 °F	52.3 °F	0.0 mph
2000-10-03	11:35 AM	52.6 °F	85 %	1018 mbar	0.0 mm	0.0 mph	NE	43 °	48.1 °F	52.6 °F	0.0 mph

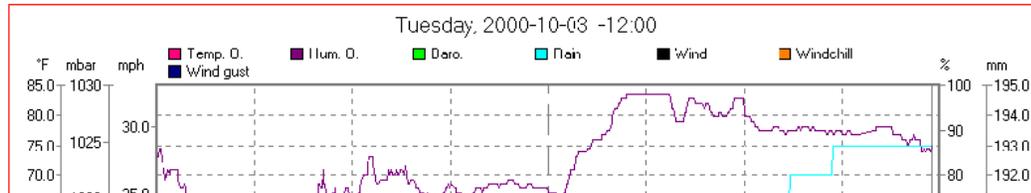
## Informations for selecting weatherdata

### Prerequisites:

The browser have to support JavaScript 1.1.

If on the left side is only "Menu" or an empty FRAME, then your browser is not supporting this JavaScript.

A "click" to the green arrows will open the submenus.



## Functions Contents

# Create start.txt

If you would like to form the Start Page ("start.html") individually, you can realize this with the help of the file "start.txt".

With this function the default entry of the start.html is exported into the start.txt.

**Caution ! An available start.txt is overwritten in this case.**

Here you can now insert your changes (for example background pictures, additional frames).

At every making of the Start.html it is checked, whether a start.txt is available and provided that one is found, its content is linked into the Start Page (Start.html).

[Functions](#)

[Contents](#)

# Update kopf-/info.html ...

(kopf = head)

If you have made changes in the Location information and/or remarks you can update your old files with this menu item.

Your own changes in these files are overwritten with this function.

Therefore use this function with consideration.

Background:

The kopf.html and/or info.html – files are only created automatically, if they are not available.

[Functions](#)

[Contents](#)

# Update Internet files ...

**For the call of this function an entry must be available under General - Location!**

With this function you can, with the current **day display**, update the HTM-tables and GIF files for the periods week, month, year and provided that the preceding week-/month-/year files are not up to date. After that the "start.html" is also updated.

With a corresponding option you can carry out this updating automatically immediately after midnight.

If you set a value at **minutes offset**, this updating is delayed around the input minutes after midnight (to **max** of 6:00 o'clock in the morning = 360 minutes).

As arrangement for the necessity of the **automatic updating** the year-Htm-tables ("j1999.htm" and/or "j2000.htm" and so forth) are used and/or if no tables are created, the Year GIF graphics of the outside temperature and here the Filedate. Who deletes these files receives for the Last year, Last month in the previous year, Last calendar week in the previous year, the Current Year, the Current Month and the Current Week updated tables and graphics. The files (Gif/Htm) of the previous month of the Current Month are and/or the previous calendar week of the Current Week not current, so also these files are updated!!

If you do not make any tables and any graphics for month and year (Setting under Internet, Adjustments, Start Page), the program does not pay attention anymore so to worn out periods! (previous month, previous year) and more can not update then the corresponding data automatically either.

**You must guarantee then for the updating through selection of these periods (week/month/year)!**

The distance between two updating calls must be **at least 1 minute!** - Updating is refused otherwise.

The file names are chosen automatically - see "[Create Html graphics](#)" and/or "[Files](#)".

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# Cursor data -> Wunderground

For this function an entry is necessary for Station-ID and password at Wunderground.com, in addition the Min-/Max bar or the Display bar must be turned on.

If this function is marked, the data are transferred automatically during “recording” - according to chosen option – to the Wunderground.com side.

By calling this function the weather data of the current cursor position are transmitted to the arranged and configured Wunderground - WEB - page.

With this function the possibility exists, to transmit individual (older or omitted) data to Wunderground.com subsequently.

For further information see [Wunderground.com](http://Wunderground.com)

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# Hour data -> Wunderground

For this function an entry is necessary for **Station-ID** and **password** at **Wunderground.com**.

By calling this function the weather data received last are transmitted per hour (for view **day** and **week** only) to the arranged and configured Wunderground - WEB - side.

With this function the possibility exists, to transmit older data to **Wunderground.com**.

In the **day**-representation **max of 24 dates** are transmitted.

In **week**-representation **max.  $7 \times 24 = 168$  dates** are transmitted.

For further information on that see [Wunderground.com](http://Wunderground.com)

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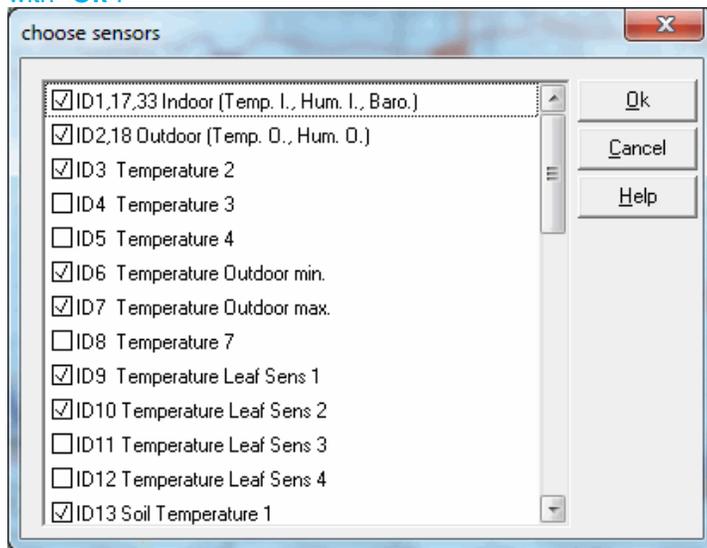
# Available Sensors

Depending on the number and the kind of the employed sensors only specific measured items are available in the Weather Station and the [Wireless interface](#).

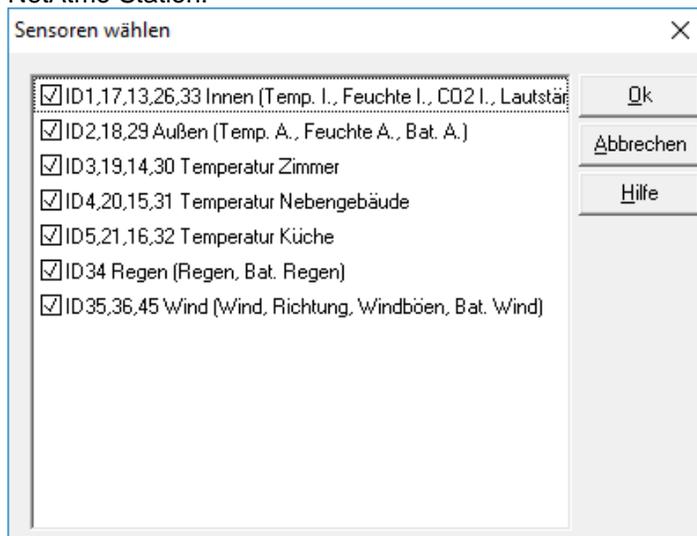
In order to simplify the selection of the measured items in the Operating- and Data Acquisition Software, the sensors which are not available can here be switched off, if required. The measured items of the corresponding sensors are then not offered any more in the respective lists.

If the option **"Automatic search for new sensors at start"** (Is valid only for ELV PC wireless interface) **was** chosen, then after every start of program only the sensors are activated that were found and set up in the entire program process. In case of bad reception circumstances this option should not be enabled.

If the Indoor-temperature-sensor-values (ID 1) are represented no more, although this sensor is **"available"**, one must deselect the sensor with the ID1,17,33 and after it then select again and must leave this Selection Window with **"OK"**!



## NetAtmo Station:



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# Special Sensors

Here you can configure the special sensors, or only change the calculated sensors.

## Sensor Dew point

The here chosen sensor becomes used for the Dew point -calculation.

In addition, this chosen sensor is the **bearing sensor** in case of calculations which require the **outside temperature**.

## Sensor Wind chill

The here chosen sensor becomes used for the Wind chill -calculation.

Precondition: Wind sensor available.

You can in addition choose here, whether the new calculation for Wind chill is supposed to be employed.

(look at [Special term -Wind chill](#))

## Sensor frost

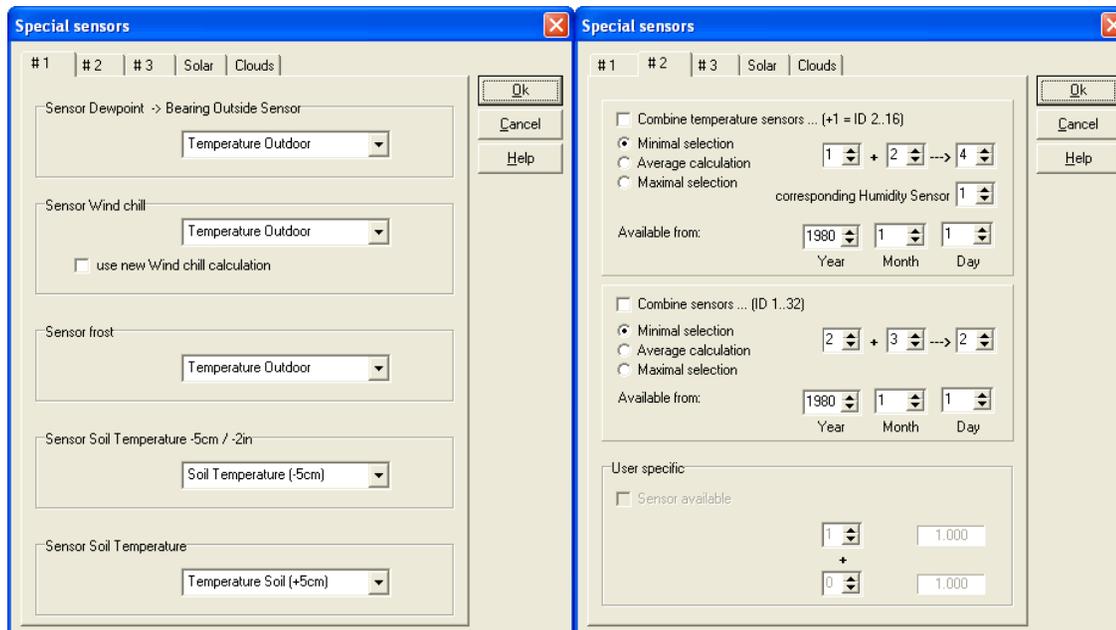
Choose the sensor here, that should be used for the frost-values.

## Sensor Soil Temperature -5cm / - 2 in (in soil)

Choose the sensor here, that should be used for the soil temperature -5cm.

## Sensor Soil Temperatur +5cm

Choose the sensor here, that should be used for grow temperatur (+5cm).



## Combine temperature sensors ...

Who would like to have from two sensors only the smaller one from both values; for example, if sensor is partial irradiated by the sun, can do that, with this option.

For the sensor selection all temperature sensors stand for the disposal, except the indoor sensor.

The **sensor 1** is always the **outdoor sensor** of the weather stations WMR-918, at the wireless interfaces mostly the **outdoor sensor**.

**It is not checked, whether the selection is reasonable !**

A possible selection can be too: sensor 1 + sensor 2 → sensor 2

The data of a **available sensor 2** are there **not lost** in this case

With choice of this option, the combined values are represented then.

The humidity-values are taken from the sensor, which was selected.

In case of choice of **"average calculation"** the mathematical mean value is formed as a result for both temperature sensor values (also humidity).

Otherwise, the lowest temperature level is taken over (**Minimal-selection**)

## Corresponding Humidity Sensor

Who has a combination without a corresponding humidity sensor, can influence with this option.  
Is as a corresponding humidity sensor, chosen the same sensor number, as with the combination, always the humidity value is taken along of the "selected" temperature sensor, otherwise only the value becomes of the here brought humidity sensor reflected.

-> with that, you have the possibility to choose also the **Combined sensor as a "main" outside sensor (Dew point).**

**Consider!** Through the structure of the graphics representation and/or line representations it is reasonable to choose always the "**higher**" sensor number for a combined sensor

### Combine sensors ... (ID 1..32)

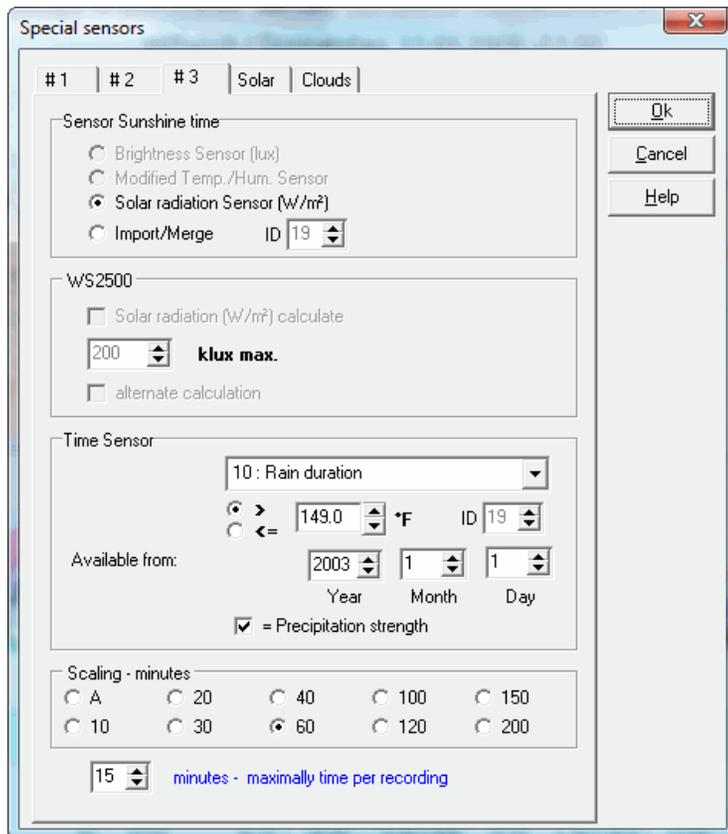
Hereby you have still the possibility to combines another sensor.

However, this combination refers only to the chosen sensor and takes not a possible affiliated into account Sensor (for example humidity).

Combined sensors become in the diagram with the sensor - short names with a concluding one

| Mean value, + Maximum selection, - Minimal selection  
marked additionally!

### Sensor settings 3 for Sunshine Time and additional Time Sensor



At **Scaling - minutes** you can pick a solid scaling or the automatic (A) scaling for the time-sensors (sun-term, rain-term).

### Sensor Sunshine Time

If several choices should exist, you can default so here the "sun-sensor" to be employed.

Reasonably for example, if you modified one temp. /humidity sensor and to have a brightness sensor of a WS2500 simultaneously in the commitment.

At the WS2500 it was planned in addition once, to be able to set in also in addition to the brightness sensor (lux) a radiation sensor (W/m<sup>2</sup>)...? !?

### Import/Merge

If directly sunshine-times (0..60 minutes allowed) comes via File-Watching as well as. data file-importing are, this Option must be activated.

The data must as **ID 37** as well as. **ID 137** (here as total-sunshine-time) come in and then they are converted on the here put in ID. **The ID 37 cannot be written directly!**

### WS2500

If you use this weather station (station or interface), you can activate the calculation of the solar radiation (W/m<sup>2</sup>) from the brightness values (kLux) here.

You can / must furthermore adjust the maximum limit of the sun intensity at the atmosphere head border here (at year high level fixes).

The default value of **200 kLux** should fit in normally. If you comparatively get much too low, converted solar radiation values (W/m<sup>2</sup>), only then you should reduce this value.

**This value is required for**

Conversion brightness values in radiation values.

Calculation of the exact sunshine time.

With the option „alternatie calculation“ the program uses another calculation method to the investigating of the **solar radiation** from the brightness (lux).

In this case the program refers to the max. possible **solar radiation** to the measuring point and puts the brightness **value** in relation to that.

## Time Sensor

If you want, for example, to collect the rain duration, so you can activate this one here.  
Wollen Sie z.B. die Regendauer erfassen, so können Sie dies hier aktivieren.

You can choose here

- which sensor should be used for the "measurement"
- from which value, the program goes out of a "time value".

### VantagePro User:

If you would like to use a Leaf-Wetness- sensor for the rain time - recording, so you need following:  
Resistance values for a Wireless Leaf & Soil Moisture / Temperature station (6343):

Dry:                    2,2 KOhm                    = 0 If                    = 62,2 °C (144°F)  
Wet:                    ap. 54 Ohm                    = 15 If                    = 73,3 °C (164°F) (Limit VantagePro = 73,9°C/165°F)

If you connect the circuit as Leaf-Sensor, also the **other Leaf-Value is influenced** unfortunately as well, therefore uses better a temperature - sensor! However, resistance values are originally laid out for LEAF - sensor

### WMR-9x8 User:

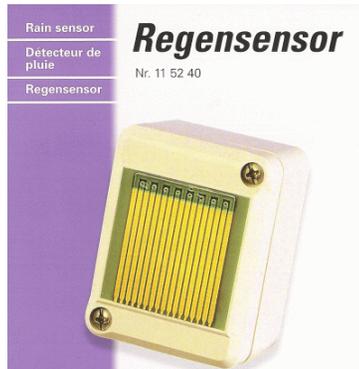
Dry:                    ap. 160 kOhm                    = ap - 30 °C (-22°F)  
Wet:                    ap. 6,2 KOhm                    = ap + 40 °C (104°F)

### WS2x00 User:

Dry:                    ap. 62 kOhm                    = ap - 18 °C  
Wet:                    ap. 6,8 KOhm                    = ap + 65 °C

Example of a sensor of the recording of the rain time. This sensor becomes with moist - recognition automatically heats.

Operating voltage: 11...15 V =  
Current: 6..8 mA , 125 mA (mit Heating)



Here data of Conrad-Electronic, Hirschau  
Order-Nr. 11 52 40 (Bausatz)                    21,95 € (without Case)  
Order-Nr. 11 52 74 (Fertiggerät)                    54,95 €

### Recommendation:

Leave the heater of the rain sensor in the wintertime always on (bridge Collector-Emitter of Heizungstransistor) - the sensor reacts to snowfall only sporadically otherwise.

### Minutes – maximally time per recording

The sun time always is determined from the time distance between current and the prior measurement.  
If the "prior" measurement is very much the off far from the current measurement now, so one can **restrict** the at most to collected sun time for it with it.

## Solar sensor

If you employ an altered temperature/humidity sensor as a solar sensor, you can carry out the corresponding adaptations here and/or must carry out here the general **activation**.

If you own a **Mebus/Irox** weather-station, you can activate **difference-temperature** to the recording of sunshine here, (in this case the sensor is not changeable!). If you win the data of a **Mebus/Irox** via **Importing/File-Watching** do **not alter the sensor ID 7!**

Wenn Sie eine **Mebus/Irox** – Wetterstation besitzen, können Sie hier **Differenztemperatur** zur Erfassung von Sonnenschein aktivieren. Wenn Sie die Daten einer **Mebus/Irox** über **Importieren/Datei-Überwachung** gewinnen dürfen Sie den **Ausgangssensor ID 7 nicht ändern!**

Consider ! With this modification (instead of temperature sensor: 1 photodiode and resistors) the illumination is measured (not global solar radiation)

Technical Data: Photodiode, receiver, in the visible field (with day light filter):

Case:TO-39; phi (deg.): ± 55; Srel%: 100%(55nm)

The read in temperature values become according to the handicaps (0 %-100 %) onto **percentages** "standardizes". One finds the result of the standardization then in the **corresponding humidity sensor**.

Example: modified temperature sensor 3 (= id 4) -> result in the humidity sensor 3 (= id 20)

for this purpose look also under **indeces**

**If you want to let show the solar sensor also in "HTML", you must choose the corresponding humidity sensor ( indece).**

**If you employ a brightness sensor and/or solar radiation sensor, you should enter also the limits values here for 0 % and/or 100 % - these dates are needed, for the calculation of the sunshine time.**

If you chose **make sun position correction**, then the **100 percent - value** at the **brightness sensor (lux)** as well as **sun radiation sensor (W/m<sup>2</sup>)** is not relevant. As well the times for sunrise / sunset.

The **100 percent - value** then is adjusted automatically at the time of day, season and the location.

### Example values:

	Brightness sensor	Solar radiation sensor
0%	0 lux	0 W/m <sup>2</sup>
100%	45 klux	180 W/m <sup>2</sup>

### Factor, Sunrise, Sunset

you can adapt the calculation of the sunshine correction with these values during sunrise and/or sunset onto your "hardware".

At the calculation with sun radiation (W/m<sup>2</sup>), as well as brightness (lux) values, the pre-determined factors per month should fit in most cases.

### Sunrise/Sunset

To and/or from this calm position of the sun (in degree) a position of the sun correction calculation is carried out (provided that you selected "**make sun position correction**")

**-> only relevant with modified sensors!**

With the here shown/selectable percentage at "**>= 85 % sunny -> time**", you determine, off which value the dates are registered as sunshine duration.

The sunshine duration is computed for every represented period (day,week,month,year) at selection again. That is, if you **change the value** here, you must **select the period/representation again**, with that the change is considered.

If the option **make sun position correction** is chosen, these dates are patched between a position of the sun **>=0,83° (=sunrise)** up to the calm sunrise value (here 09:10) and/or. from sunset (here 15:30) to sunset (=0,83°).

**xx % humidity - factor reduction:** (for better high fog consideration, bad weather)

control range **81-100%** - At **100 %** this option is **deactivated**.

Is the humidity of the chosen "dewpoint sensor" greater/equal of the selected value here, then the chosen factor is reduced during the "position of the sun correction time".

Example with **factor 40:**

with humidity **99 %** -> acting factor: **24**  
 with humidity **90 %** -> acting factor: **27**  
 with humidity **81 %** -> acting factor: **30**

**Minutes - maximally sunshine time per recording**

The sunshine time becomes always from the interval between current and to the previous measured value determines.

You can limit the sunshine time to be registered maximally for that with that so the "previous" measured value is now very much far from the current measured value away.

**Available from:**

Please **activate** this option and **change** corresponding date, if you want, that before from this date a solar sensor is not considered.

This option is important, when you, before you employed the modified temperature sensor, already under this sensor number, a normal temperature-/humidity sensor in use had.

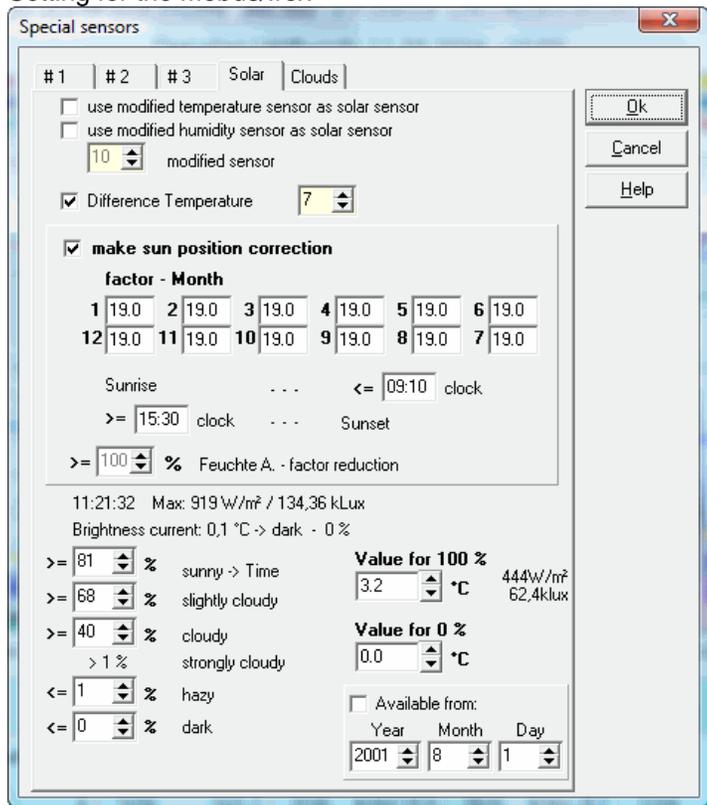
**Consider!**

The transformation of the temperature levels into percentages and position of the sun correction **is very computer bound** - the representation the month-/year dates and/or. diagram can be delayed in this case tremendously

**Reference:**

If you receive too low **sunshine times** in connection with a modified **temperature sensor** - and is presupposedly „**make sun position correction**“ is activated, so input for „**Sunrise**“ and „**Sunset**“ by way of experiment in each case **12:00** o'clock.

**Setting for the Mebus/Irox**



## My settings for the VantagePro Plus:

Special sensors

# 1 | # 2 | # 3 | Solar | Clouds

use modified temperature sensor as solar sensor  
 use modified humidity sensor as solar sensor  
 16 modified sensor  
 Difference Temperature 1

**make sun position correction**  
 factor - Month default

1	0.388	2	0.389	3	0.390	4	0.390	5	0.391	6	0.394
12	0.388	11	0.389	10	0.390	9	0.390	8	0.391	7	0.394

Sunrise ... <= 09:10 clock  
 >= 15:30 clock ... Sunset  
 >= 100 % Hum. D. - factor reduction

09:20:51 Max: 692 W/m<sup>2</sup> / 101,24 kLux  
 Brightness current: 114 W/m<sup>2</sup> -> strongly cloudy · 31 %

>= 85 % 317 W/m<sup>2</sup> sunny -> Time Value for 100 %  
 >= 68 % slightly cloudy 180 W/m<sup>2</sup> 373 W/m<sup>2</sup> 52,5klux  
 >= 45 % cloudy Value for 0 %  
 > 3 % strongly cloudy 18,0 W/m<sup>2</sup>  
 <= 3 % hazy  
 <= 0 % dark

Available from:  
 Year Month Day  
 2001 8 1

Special sensors

# 1 | # 2 | # 3 | Solar | Clouds / Solar energy

from -to

**Month**

1	08:40 16:30	2	08:05 17:00	3	07:45 00:00	4	07:40 00:00	5	07:05 00:00	6	06:45 00:00
12	08:45 16:30	11	08:40 17:00	10	08:35 19:00	9	08:03 20:00	8	07:35 00:00	7	07:10 00:00

Solar energy

Efficiency 14 %  
 Surface 5,000 m<sup>2</sup> / Kwp  
 Profit 0.39140 €..\$ / kWh

If your solar sensor is - with me, for example at the morning of a high mountain comb - so wrong cloudiness degrees are determined during the radar shadow.

Here you can preset, in which period the program is supposed to compute the cloudiness degree.

In the Case of a time value of 00:00 the cloudiness is determined from sunrise and/or sunset (therefore always).

If the preset time is according after sunrise and/or before sunset then the program reports between sunrise and the time and/or the time and sunset „no Calculation“.

### Solar energy

Here are the settings needed for calculation for the solar energy.

My settings for the WS2500:

use modified temperature sensor as solar sensor  
 use modified humidity sensor as solar sensor  
 8 modified sensor

**make sun position correction**

**factor - Month**

1	0.388	2	0.389	3	0.390	4	0.390	5	0.391	6	0.394
12	0.388	11	0.389	10	0.390	9	0.390	8	0.391	7	0.394

<= 09:30 clock Sunrise  
 >= 14:40 clock Sunset  
 >= 85 % Feuchte A - factor reduction

Brightness current: 0,126 klux -> dark - 0 %

>= 80 % 0 klux sunny -> Time Value for 100 % 45.0 klux 0W/m<sup>2</sup> 0,0klux  
 >= 70 % slightly cloudy  
 >= 50 % cloudy Value for 0 % 2300.0 lux  
 > 5 % strongly cloudy  
 <= 5 % hazy  
 <= 0 % dark

Available from:  
 Year Month Day  
 2001 9 1

My settings for the WS2000 with modified temperature sensor:

use modified temperature sensor as solar sensor  
 use modified humidity sensor as solar sensor  
 8 modified sensor

**make sun position correction**

**factor - Month**

1	15.0	2	20.0	3	25.0	4	30.0	5	35.0	6	44.0
12	15.0	11	20.0	10	25.0	9	30.0	8	35.0	7	44.0

<= 09:10 clock Sunrise  
 >= 15:20 clock Sunset  
 >= 85 % Feuchte A - factor reduction

Brightness current: -17,9 °C -> dark - 0 %

>= 94 % 0W/m<sup>2</sup> 0,0klux sunny -> Time Value for 100 % 62.1 °C  
 >= 80 % slightly cloudy  
 >= 50 % cloudy Value for 0 % -18.0 °C  
 > 5 % strongly cloudy  
 <= 5 % hazy  
 <= 0 % dark

Available from:  
 Year Month Day  
 2001 9 1

My settings for the WMR-918N with modified temperature sensor:

- use modified temperature sensor as solar sensor
- use modified humidity sensor as solar sensor

3 modified sensor

**make sun position correction**

**factor - Month**

1	8.5	2	12.0	3	15.0	4	18.8	5	27.0	6	29.5
12	8.5	11	12.0	10	15.0	9	18.8	8	27.0	7	29.5

<= 09:10 clock Sunrise

>= 15:15 clock Sunset

>= 81 % Feuchte A - factor reduction

Brightness current: -24,4 °C -> dark - 0 %

>= 90 % sunny -> Time

>= 81 % slightly cloudy

>= 65 % cloudy

> 14 % strongly cloudy

<= 14 % hazy

<= 1 % dark

**Value for 100 %**

35.0 °C 0W/m²  
0,0klux

**Value for 0 %**

-24.6 °C

Available from:

Year Month Day  
2001 9 21

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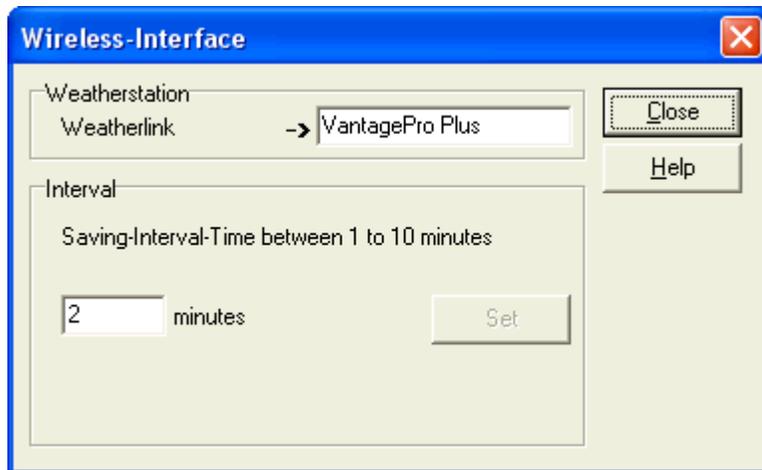
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# Wireless Interface Adjustments

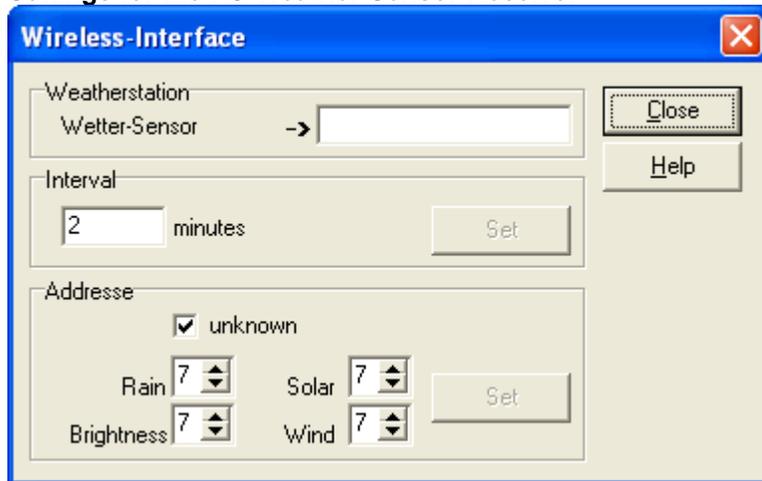
Adjustments for **Weather Station WMR-918/968** and **WM-918** and **Weather-Sensor too**  
- for **ELV PC Wireless Interface** see further below

In this menu item one can **change** the saving interval for the weather data  
- **the saving is necessary for later evaluations.**

2 minutes is preset – for Weather Sensor 3 minutes.  
Values are possible between 1 minute and 15 minutes.



## Settings for the PC-Weather-Sensor-Receiver



With „**unknown**“ also not standard protocol/date are signaled, otherwise such data are ignored.

If you choose the number „**8**“ in the case of the addresses, the dates of every arbitrary sensor of the corresponding model (Rain, Brightness, Solar, Wind) are used, otherwise only the dates with the corresponding address number.

**- The following is valid only for ELV PC wireless interface**  
**This function is available only with connected wireless interface!**

In this window you can make general settings for the recording of the weather data in the [wireless interface](#).  
The recording of the weather data can occur in this case in an interval of 3 minutes up to 120 minutes (2 hours). As a default the interval is 5 minutes.

For the measured values a memory of 32 Kbytes is available in the [wireless interface](#). The maximum number of the storable measured values is dependent on the interval and on the number of supported sensors (9 or 16). The memory allows however the recording of an entire day, even in the largest configuration level with the smallest

interval. If the memory is full, the oldest data are overwritten (Ring memory). Therefore, the saved data should be read out in time with the Operating- and Data Acquisition Software. As a default 9 sensors are supported by the wireless interface.

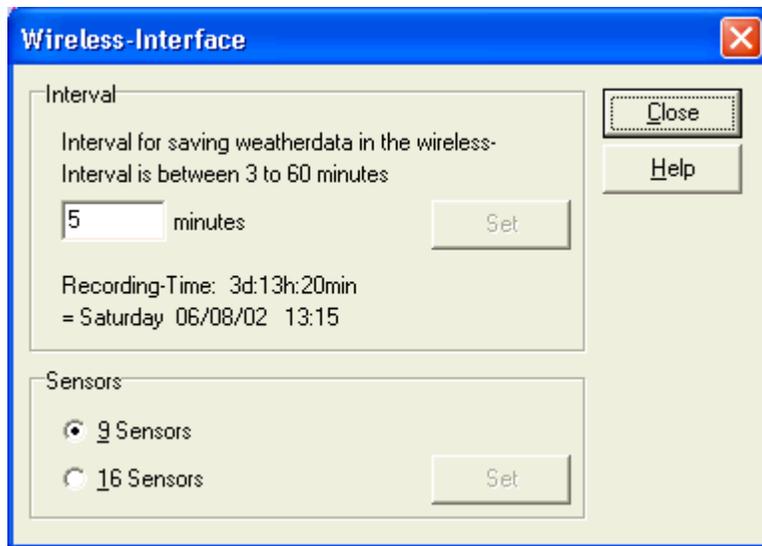
The following table clarifies the connection between the number of the supplementary sensors, the chosen interval and the maximum measurement duration. 30 and/or 57 bytes are needed for every data record.

Sensors	Interval (Minutes)	maximum measurement duration (Days)
9	3	2 days 3 h 12 min
9	5	3 days 13 h 20 min
9	10	7 days 2 h 40 min
16	3	1 day 1 h 36 min
16	5	1 day 18 h 40 min
16	20	7 days 2 h 40 min

Sensors	max. interval (Minutes)	max. recording duration
9	60	42 days 16 h 00 min
16	60	21 days 8 h 00 min
( 16	120	42 days 16 h 00 min )
old interface:		
9	60	42 days 16 h 00 min
16	90	42 days 15 h 00 min

**Hint:**

The interval and the number of the supplementary sensors should be chosen during the initiation of the Wireless interface and, if possible, not be changed anymore since at a modification all data in the wireless interface disappear! Before the modification of the **interval** or the **number of the supplementary sensors** a security query is carried out first in this case. In doubt available weather data should be read out first before the changeover.



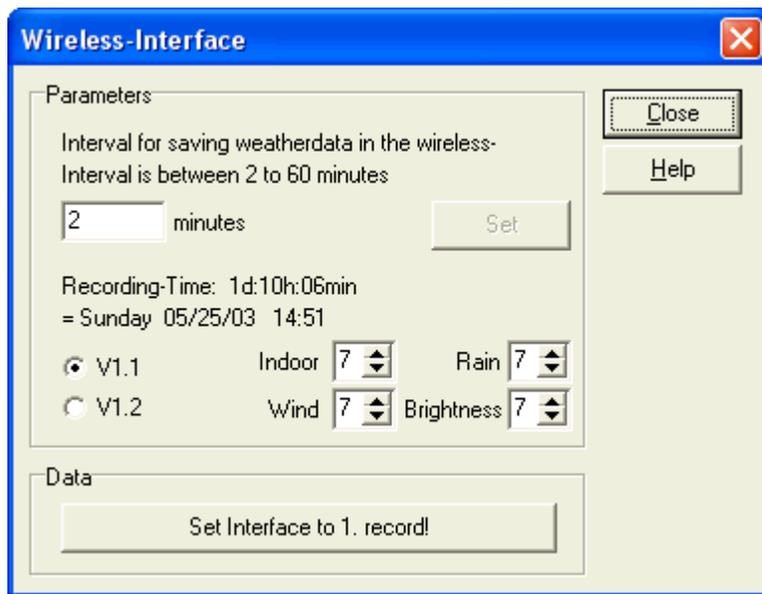
## WS2500-PC

With this interface, you have additional settings:

- Sensor- Protocol version (V1.1/V1.2)
- ID of the Indoor, Wind, Rain and Brightness sensor (necessarily if the neighbor has also such a weather station as well as sensors in the use)

With „**Set Interface to 1. record!**“ can you try with possible **lost data**, these data partially again to gets. This **hand - intervention** is not considered by the program!

**You therefore are responsible for the correct data processing!**



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# Adjustments VantagePro

## Consider!

**During recording = Online-operation are many functions (button gray) deactivated.  
Other functions are actively switched only if an alteration is recognized.**

Under **Weatherstation**, you can set an own name for your weather-station as well as pretend the actual name.

## Recording interval

Here you can change the storage-interval for the weather data in the online operation. Allowed range is between 1 minutes and 15 minutes.

## Weatherlink Interval

Here you can see the set storage-archiv interval of the VantagePro data-logger and also can alter.

**When altering the Interval, all stored data are deleted in the data-logger!**

The program checks each starting of the recording whether new data are available in the data logger. If there are new data, then the data are first taken over (data logger read out).

## Logging Ø Temperature

You can see the setting of the weather-station here or can alter, whether the average-temperature is stored at the end of the storage interval or the straight current temperature.

## Rain and Wind settings

Here, you see the settings for Rain as well as Wind with the possibility of the alteration.

**Consider!** The here shown value for rain sensor type is used from the program to get correct rain values (current, day, storm, month year).

## Error Value -> last Value

With selection of this option, the last correct measurement value is used at wrong values (only in the online-operation), otherwise 0 is used.

## Date/Time set -> Start Program (1x day)

If the software should balance the time of the VantagePro Console with the time of the computer at program-start, so you place this option. It is exported with multiple start only once on the day!

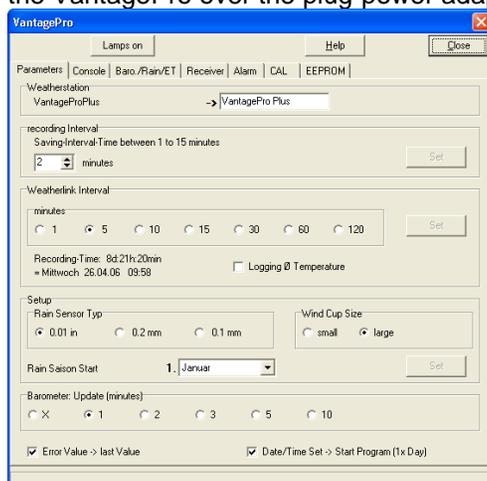
## Barometer Update (minutes)

Setting for the updating more frequently of the air pressure with the VantagePro (1,2,3,5,10 minutes), as standard intended of the weather-station (15 minutes)

**A problem should not be withheld on that occasion: (mainly with VantagePro1). The firmware of the Console has apparently a problem with this sporadically. Notices: if suddenly "beeps" the console and then also a air pressure of about 680hPa is shown. WsWin corrects this mistake normally. The Console and also Weatherlink hold on to this low data record and falsify the minimal-value of the air pressure with it!**

## Lamps on / Lamps off

With using of this button you can the background-illumination of the VantagePro over the software turn on - as well as turn off also again. With what, the program cannot recognize whether already the background-illumination is switched on and assumes therefore the state is switched off for that reason. This function normally requires a powersupply of the VantagePro over the plug-power adapter.



## VantagePro Console

Here, the you can see the current settings of VantagePro with the possibility of the alteration (provided not active recording).

It also was anticipated to set the Units and others over the software. Unfortunately, this alteration takes over the Console only with complete power-failure.  
For that reason here no alteration-possibility!

### AM/PM Time Mode and Month/Day Format

With it you can alter then statement/indication on the display (for example, if you don't find your manual).

### Setting Time zone

Possibility of the adaptation of the time-zone/daylight saving with the software.

With GMT\_Offset (provided one wants to use), it is to be heeded that it is about the statement 1,00 hours. An setting of -1225 would be 15 minutes for a western time-zone (negative) with 12 hours.

### Time/Date

The program shows the received time of the VantagePro at the corresponding computer-point in time here. With **Set**, the weather-station is second-exactly balanced with the time of the computer.

Accordingly correct computer-time is precondition for it for that reason.

If the deviation from computer-time and weather-station-time is too big, the weather-station-time is deposited „red“.

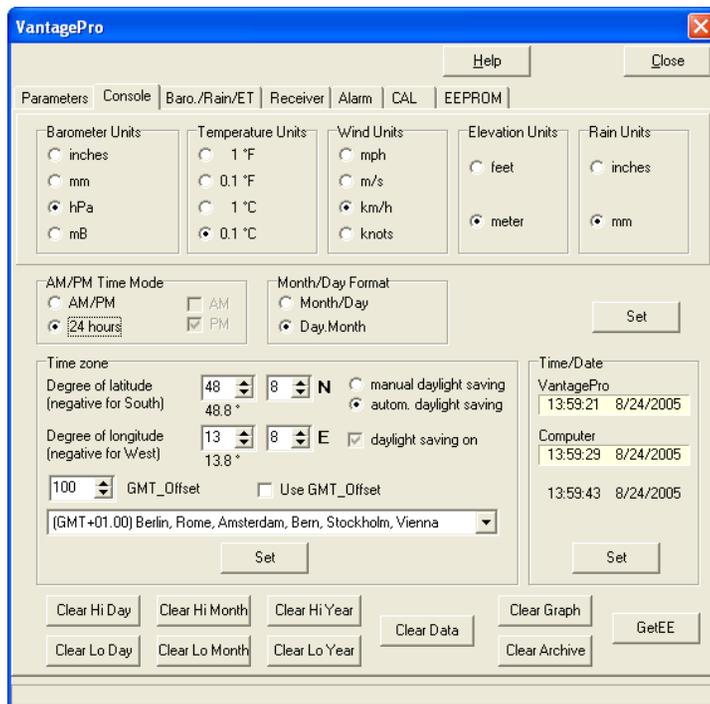
- Clear Hi Day**                   clears the high values of the current day
- Clear Low Day**               clears the low values of the current day
- Clear Hi Month**              clears the high values of the current month
- Clear Low Month**           clears the low values of the current month
- Clear Hi Year**               clears the high values of the current year
- Clear Low Year**             clears the low values of the current year
- Clear Data**                 clears the current of values of the console -> Displays “- - „
- Clear Graph**               clears all graph data, wich are stored the station.
- Clear Archive**             clears the archive(data logger)

### GetEE

Produce a storage-discount of the complete EEPROM - content (settings, calibration values, alarm-values, graphic data point) of the VantagePro.

You can write back again the content under EEPROM or can look /stores as text file.

You have the possibility with it at station exchange, shifts, updating to VantagePro2, to secure your stored data, to appraise and to possibly later write back again.



## VantagePro Barometer/Rain/ET

Here, you see, how the VantagePro determines the relative air pressure, as well as do the necessary settings for a correct air pressure-indication.

If you would like to use a solid adjustment-value, so you must input the value in the field **inHg(hPa)**. This value is then be recognized in Barometer CAL Data with **BARCAL**.

Normally, the entry of the correct elevation height suffices.

### Rain/ET (inch)

Here you can delete corresponding values (set to 0).

### Year Rain

Possibility, to correct the yearly-rain-amount.

### Year ET

Possibility to correct the yearly evapotranspiration value.

The screenshot shows the VantagePro software interface with the 'Baro./Rain/ET' tab selected. The interface is divided into several sections:

- Barometer CAL Data:** A list of calibration parameters with input fields and units:
  - Barometer: 29.858 inHg
  - Elevation: 2631 ft
  - Dew Point: 87 °F
  - Virtual Temp: 88 °F
  - C (Hum. corr. factor): 32
  - R (Correction ratio): 1.099
  - GAIN: 1.541
  - BARCAL: 0.000 inHg
  - OFFSET: 18.375 inHg
  - Barometer abs.: 27.168 inHg
- Barometer / Elevation:** A section for setting barometer and elevation values:
  - Barometer: 0.000 inHg
  - Elevation: 802 m <-> 2631 ft
  - 2631 ft
  - Set button
- Rain/ET (inch):** A section for setting rain and evapotranspiration values:
  - Day: Rain 0.000 (selected), ET 0.008
  - Month: Rain 3.118, ET 2.028
  - Year: Rain 30.866, ET 17.788
  - Storm: Rain 1.150
  - Delete button
- Year Rain:** A section for setting the yearly rain amount:
  - Year Rain: 30.866 in
  - Set button
- Year ET:** A section for setting the yearly evapotranspiration value:
  - Year ET: 17.788 in
  - Set button

## VantagePro Receiver

Indication, setting of the receivers of the VantagePro as well as VantagePro 2 through the software.

With the VantagePro, you have the possibility additionally the „Gain“ (amplification) turn on as well as to turn off. With the VantagePro2, this function doesn't exist.

### VantagePro

The screenshot shows the VantagePro software interface with the 'Receiver' tab selected. The interface includes a menu bar with 'Parameters', 'Console', 'Baro./Rain/ET', 'Receiver', 'Alarm', 'CAL', and 'EEPROM'. The main area displays settings for eight stations and transmitter options.

Station	Station Name	H	T
Station 1	ISS Station	1	00
Station 2	Temperature/Humidity 4x	1	10
Station 3	Leaf Station	1	--
Station 4	No station - OFF	0	--
Station 5	No station - OFF	0	--
Station 6	No station - OFF	0	--
Station 7	No station - OFF	0	--
Station 8	No station - OFF	0	--

**DavisTalk Transmitter**  
8.....4.....1 | 00000111

ReTransmit - Station  
 Off  8  7  6  5  4  3  2  1

Gain on

### VantagePro2

The screenshot shows the VantagePro2 software interface with the 'Receiver' tab selected. The interface is similar to VantagePro but lacks the Gain controls.

Station	Station Name	H	T
Station 1	ISS Station	0	00
Station 2	Temperature/Humidity	0	10
Station 3	Leaf Station	0	--
Station 4	No station - OFF	0	--
Station 5	No station - OFF	0	--
Station 6	No station - OFF	0	--
Station 7	No station - OFF	0	--
Station 8	Soil Station	0	--

**DavisTalk Transmitter**  
8.....4.....1 | 10000111

ReTransmit - Station  
 Off  8  7  6  5  4  3  2  1

## VantagePro Alarm and Calibration settings

Indication of the current alarm-values and possibility of the alteration/setting as well as Total-cancellation of all alarm-values (**Clear all alarm**)

For the deletion of one single alarm-value enter „-“ (2x minuses) at the corresponding value.

With **Set**, the alterations are transferred into the weather-station.

The screenshot shows the 'Alarm' tab in the VantagePro software. It displays a grid of settings for various sensors. The 'Clear all Alarm' button is visible at the bottom left, and the 'Set' button is at the bottom right.

Category	High	Low	High	Low
Indoor Temperature	-- °F	--	-- %	--
Outdoor Temperature	95 °F	--	-- %	--
Sensor 1 Temperature	95 °F	--	-- %	--
Sensor 2 Temperature	-- °F	--	-- %	--
Sensor 3 Temperature	-- °F	--	-- %	--
Sensor 4 Temperature	-- °F	--	-- %	--
Sensor 5 Temperature	-- °F	--	-- %	--
Sensor 6 Temperature	-- °F	--	-- %	--
Sensor 7 Temperature	-- °F	--	-- %	--
Sensor 8 Temperature	-- °F	--	-- %	--
Dew Point	-- °F	--		
Wind Chill	-- °F	--		
Heat Index	-- °F	--		
THSW	-- °F	--		
Solar	1800	W/m²		
UV	--	Index		
ET Day	--	in		
Time	13:00			

Indication of the current Calibration values, with the possibility of the alteration as well as total clearing (**Clear all CAL**).

With **Set**, the alterations are transferred into the weather-station.

The screenshot shows the 'CAL' tab in the VantagePro software. It displays calibration values for various sensors. The 'Clear all CAL' button is visible at the bottom left, and the 'Set' button is at the bottom right.

Category	Raw	Console	Adjusted
Indoor Temperature (°F)	77.3	77.4	77.4
Outdoor Temperature (°F)	73.0	73.3	73.3
Sensor 2 Temperature (°F)	73.0	73.0	73.0
Sensor 3 Temperature (°F)	50.0	50.0	50.0
Sensor 4 Temperature (°F)			--
Sensor 5 Temperature (°F)			--
Sensor 6 Temperature (°F)			--
Sensor 7 Temperature (°F)			--
Sensor 8 Temperature (°F)			--
Leaf Wetness Sensor 1	83.0	83.0	83.0
Leaf Wetness Sensor 2	145.0	145.0	145.0
Leaf Wetness Sensor 3			--
Leaf Wetness Sensor 4			--
Soil Moisture Sensor 1	67.0	67.0	67.0
Soil Moisture Sensor 2	64.0	64.0	64.0
Soil Moisture Sensor 3	63.0	63.0	63.0
Soil Moisture Sensor 4			--

# Vantage EEPROM

## Precondition:

- Available or before stored EEPROM-File (under Console).
- in the stored file there must be the correct Rain sensor typ set.

**A write back to the weather-station in the not registered WsWin-Programm-Version is not executed! -> it is simply ignored without information**

Hereby, you have the possibility:

- to alter individual byte or double byte in the EEPROM
- to write back the long-term graphic data (storm, month, year)
- To convert graphic data of the VantagePro to the format of the VantagePro2 (station-changes))
- To store graphic data as weather-values as data file
- To look at graphic data (storm, hours, day low, day high month year).

Following data are not taken into account:

- 15 minutes of barometer
- 15 minutes of rain
- 10 minutes of average wind

## VantagePro --> VantagePro2

This function stands only by the disposal if the attached station is a VantagePro2 and it itself with the content of the EEPROM - data file is from a VantagePro.

For writing to a VantagePro2, it must be converted in this case previously!

## Graph data -> graph\_data\_yyyymmdd.txt

For yyyymmdd becomes the date of the EEPROM data file (here 20050825).

Example:

Zeitraum	TEMP_I °C	TEMP_O °C	DEW °C	CHILL °C	THSW °C	HEAT °C	HUM_I %	HUM_O %	WIND km/h	WINDD °	BAR hPa	RAIN mm		
16:00	21.1	14.4	13.3	13.9	14.4	13.9	43	93	3.2	90	1007.8	0.0		
15:00	21.1	15.0	12.8	15.0	16.1	14.4	43	87	4.8	158	1007.9	0.0		
..														
18:00	22.2	13.9	8.3	13.3	13.9	13.9	41	70	4.8	135	1009.5	0.0		
17:00	22.2	13.3	8.9	13.3	12.2	13.3	42	74	4.8	135	1009.4	0.0		
hi 10.08.2005	25.0	22.8	16.1		32.2	22.8	54	95	30.6	0	1010.5	0.0		
10.08.2005	18:32	15:56	09:33		13:06	14:13	00:18	00:01	15:40	135°	11:44		---	
hi 09.08.2005	22.2	15.0	11.7		23.3	13.9	42	98	29.0	0	1012.7	0.0		
09.08.2005	19:11	14:06	13:23		13:24	13:22	16:31	05:47	14:16	135°	00:00		---	

## The Use/Utilization of the function

### Write to VantageEEPROM

**happens on danger and responsibility of the respective users.  
Each claims for replacement from it become impossible.**

## Write to Vantage EEPROM

**Only the Graph\_Data points are written!**

Before is tried to write the content of the EEPROM again, the content of the EEPROMs (GetEE) is saved. Only if saving was completed successfully, is begun to write the EEPROM.

At writing protocol-data file "eeprom\_write.txt" becomes positioned.

Accurs at writting of a block (normally 100 bytes) a error, it is tried to write this block faultlessly. If this goes wrong again, it is tried to writte this block successfully at the end of all writing.

It is recommended to bring previously the VantagePro at the Console in the SETUP-Mode:  
Button „DONE“ presses and holds and then button „-“ presses.

## WriteEE

With this you can write individual byte or words (option behind 2. Byte activate).

The program gives support on that occasion with certain data in form of inserted tool-tips.

For example if you point to the rain-value with the mouse pointer, the EEPROM-Position and the content become, as contains shown.

Example:

Pos: **0CC1 = 16 0E** - > current yearly-rain-volume at VantagePro2 of 721,2 mm

Calculation to it:  $0E16 = 3606 * 0.2$  (Rain sensor typ 0.2 mm) = 721,2 mm

or

Pos: **08B3 = CB 75** - > current yearly max barometer at VantagePro2 of 1021,2 hPa

Calculation to it:  $75CB = 30155 / 1000$  inHg = 30,155inHg = 1021,16 hPa

The screenshot shows the VantagePro software interface. The title bar is blue with the text 'VantagePro' and a close button. Below the title bar are buttons for 'Help' and 'Close'. The main window has a menu bar with 'Parameters', 'Console', 'Baro./Rain/ET', 'Receiver', 'Alarm', 'CAL', and 'EEPROM'. The 'EEPROM' menu is selected.

On the left side, there is a section for 'Vantage EEPROM File' with a text box containing 'EEPROM\_Vantage20030108\_20050825.eep' and a browse button. Below this are fields for 'CRC' (5BAF 5BAF), 'Rain' (0.254), and 'Length' (4096). There are also fields for 'Station' (1/4/2005) and 'File' (1/8/2003). A 'Data from' field shows '16:37 8/25/2005'. Below that is a table with columns 'Hrs', 'Day', 'Mon.', 'Year', 'Storm', and 'Rain', containing values '5', '4', '21', '4', '16', and '4'. There are several buttons: 'VantagePro ---> VantagePro 2', 'Graph data -> graph\_data\_20050825.txt', 'Write to Vantage EEPROM', and 'WriteEE' with a '000' field and 'FF' checkboxes.

On the right side, there is a date selector '8/25/2005' and a dropdown menu 'Day high'. Below this is a table of sensor readings:

Parameter	Value	Unit	Time
TEMP_IN	76	°F	12:25
TEMP_OUT	73	°F	16:54
DEW	59	°F	10:17
CHILL		°F	
THSW	89	°F	12:48
HEAT	73	°F	16:54
HUM_IN	53	%	00:18
HUM_OUT	97	%	00:50
BAR	29.94	inHg	01:29
WIND	13.0	mph	23:24
WIND_DIR	0	°	0°
RAIN	0.010	in	
RAIN_RATE	0.010	in/h	05:00
ET	0.170	in	
SOLAR	1013	W/m²	12:49
UV	7.6	Index	12:43
LEAF	15		06:34
SOIL	--	cb	--

At the bottom left, there is a 'STORM' field with a value of '1.030 in' and a date range from '08/20/2005' to '08/23/2005'. A counter shows '- 1 +'.

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# Adjustments TE923

## Attention!

If functions cannot "be placed" as well as. the "Set" - button doesn't exist, the used Hardware 1..4 doesn't support this function.

Under **Weatherstation**, you can set an own name for your weather-station as well as pretend the actual name.

## Recording interval

Here you can change the storage-interval for the weather data in the online operation.

Allowed range is between 1 minutes, 2 minutes or the Storage interval used by the Weather station (5...1440 minutes).

## TE923 Interval

Here you can see the set storage-archiv interval of the stations data-logger and also can alter.

**Pay attention in this case:** if record-time period is exceeded on that occasion one year, you cannot do this with Wswin.

Example: unit with 128kB Memory = 3442 records = storage time period up to the year 2016 (State 2006).

## Altitude (above sea)

Here you see your set Altitude in the weather station.

**A correct input of the location height is necessarily to get correct relative air pressure**

The value under the **input fields** shows the value, that is used in this software.

**Both values should be normally identical!**

## UV -> VantagePro 0..16 UV

With this option the UV - values become standardizes like the weather-station VantagePro.

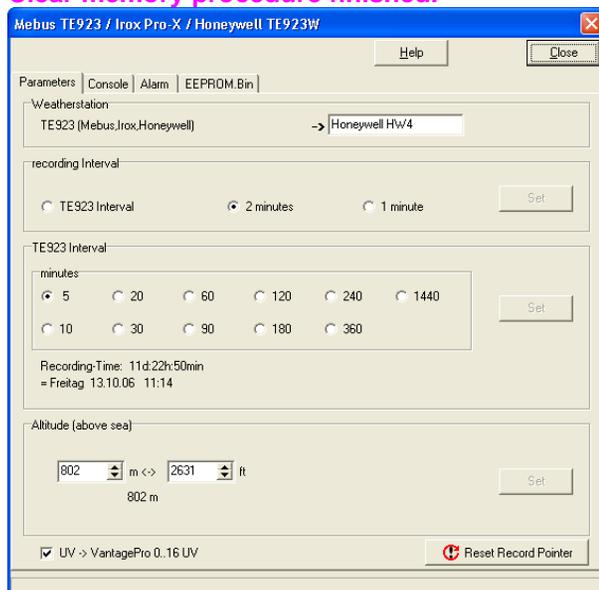
## Reset Record Pointer

If you initialize the weather-station again, it can be necessary to correct the program-internal data record-pointer.- only possible, if recording not started.

**Clear the memory at main unit with the following procedures:**

- ✓ Press & hold [LIGHT/SNOOZE] and then [UP] for 4sec.
- ✓ Backlight is flashing.
- ✓ Press [SET] to start erase.
- ✓ "BEEP"<1sec off>,"BEEP"<1sec off>..... until the end.
- ✓ Go back as usual.
- ✓ Uninstall the batteries/power supply
- ✓ Wait 10 seconds, Re-install the batteries

**Clear memory procedure finished.**



## TE923 Console

Here can you see the current settings of the weather station TE923.

Alterations and transferring to the station can be made only with hardware version 4

### AM/PM Time Mode and Month/Day Format

You can alter representation of the Display (for example doesn't find the handbook).

### Settings „Time zone local“ and/or „Time zone selected“:

Here you see, what ist set at the Station

Possibility of the adaptation of the time-zone/summertime-changeover (daylight saving time = DST) with software and with hardware version 4 only.

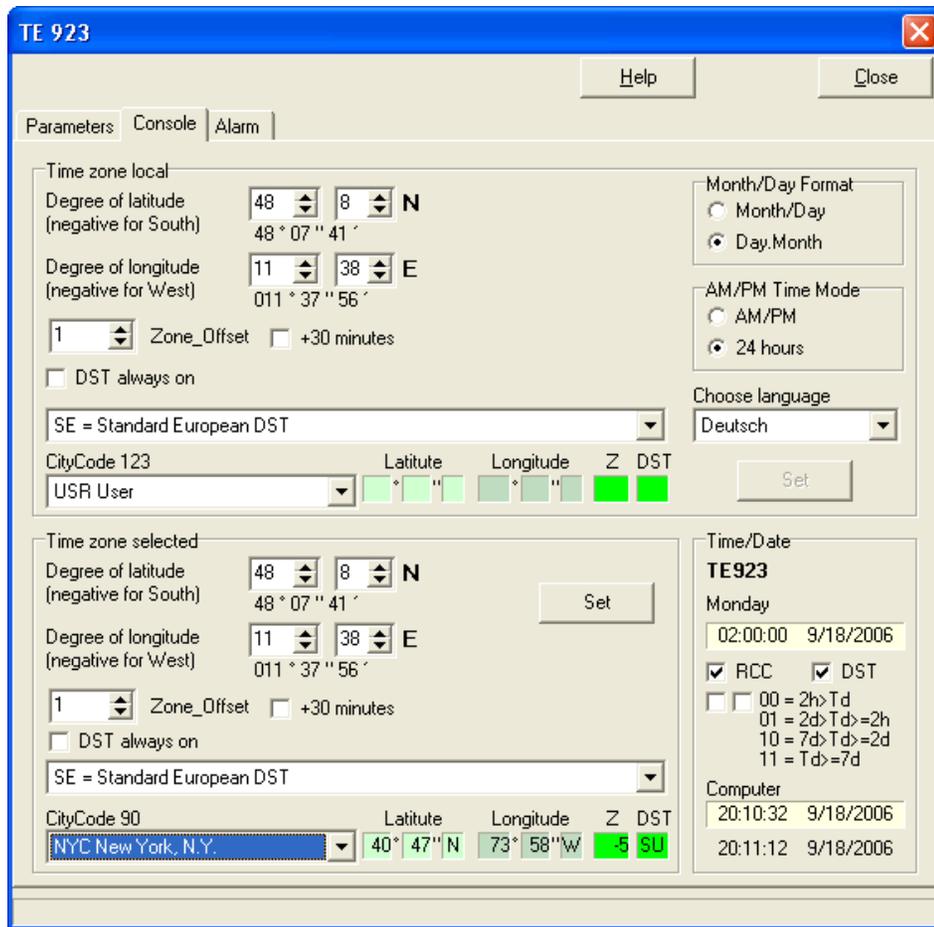
### Time/Date

The program shows the data here when the time of the Station updates / alters / corrects (here 02:00:00)

RCC = operation with Time sync radio signal

DST = Daylight Saving Time = summertime, (DST is not shown with hardware version 1!)

The fields lying under it show additional information.



## TE923 Alarms

Here, you see the current settings of the TE923 with the possibility of the alteration in accordance with the existing hardware-version.

**HW1:** here, one **cannot** alter anything unfortunately.- only looks at

**Time-alarms can be alter only with HW4.**

The wind-alarms are stored in the station in **mph (miles per hour)**, therefore it can occur, this your input value something deviates.

The screenshot shows the 'TE 923' software interface with the 'Alarm' tab selected. The window title is 'TE 923' and it includes 'Help' and 'Close' buttons. The 'Alarm' tab contains the following settings:

- Alarm active**
- Time Alarm**
  - Snooze Duration: 8 minutes
  - Pre Alarm: 30 minutes
  - Single Alarm: 08:00
  - Weekday Alarm: 07:00
- Temperature Alarm**
  - upper Temp. Alarm: 118.0 °F
  - lower Temp. Alarm: --- °F
- Rain/Wind Alarm**
  - Rain: --- in
  - Wind: 45 mph
  - Wind gust: 40.0000 mph

# EEPROM.Bin

Mebus TE923 / Irox Pro-X / Honeywell TE923W

Parameters Console Alarm EEPROM.Bin

TE923 EEPROM File  
EEPROM\_dirk.bin ... Read EEPROM

**Hardware:** 3 128kB  
**Program Version:** NextRecord 1233

Barometer 11  
5 Channel & UV 11  
RCC & Sunrise/Sunset FF  
Wind & Rain 23  
System Controller 25  
Record Interval 5 minutes

**oldest Record**  
Year 2165  
Day of Week Mittwoch

Record 0 20.09.2009 13:27 Ti:23.6°C Hi:49% T1:21.5°C H1:54% B:1011.1hPa WG:6.3km/h  
39 20 13 27 36 A2 49 15 C2 54 AA 0A AA 77 42 0A 57 AA 0A AA AA 0A AA 69 00 32 3F 06 24 C2 39 00

Record 1  
Record 2  
Record 3

Last Record 27.09.2009 16:27 Ti:24.2°C Hi:54% T1:19.7°C H1:74% B:1007.6hPa WG:1.9km/h  
39 27 16 27 42 A2 54 97 C1 74 0A 00 0A 77 42 92 59 0A 00 0A 0A 00 0A 17 00 F9 3E 05 09 C2 12 00

Record 1232 Address 47073 Read Write CSV

39 27 16 27 42 A2 54 97 C1 74 0A 00 0A 77 42 92 59 0A 00 0A 0A 00 0A 17 00 F9 3E 05 09 C2 12 00  
27.09.2009 16:27 Ti:24.2°C Hi:54% T1:19.7°C H1:74% B:1007.6hPa WG:1.9km/h

D:\Eigene Dateien\Elv\MebusMun\EEPROM\_dirk.bin

This function is only available in the **registered version** and if the **recording is stopped**.

Here, you have the possibility of reading the complete data-logger-content and to store in a CSV-file and to be able to recognize problems with the data recording (date / time and values).

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# Adjustments NetAtmo

## Note!

This Internet Station is currently only supported by the File Watching function!

Necessary for this is the help program

NetAtmoXML.exe ( <http://prtgtoolsfamily.com/downloads/sensorsxml> )

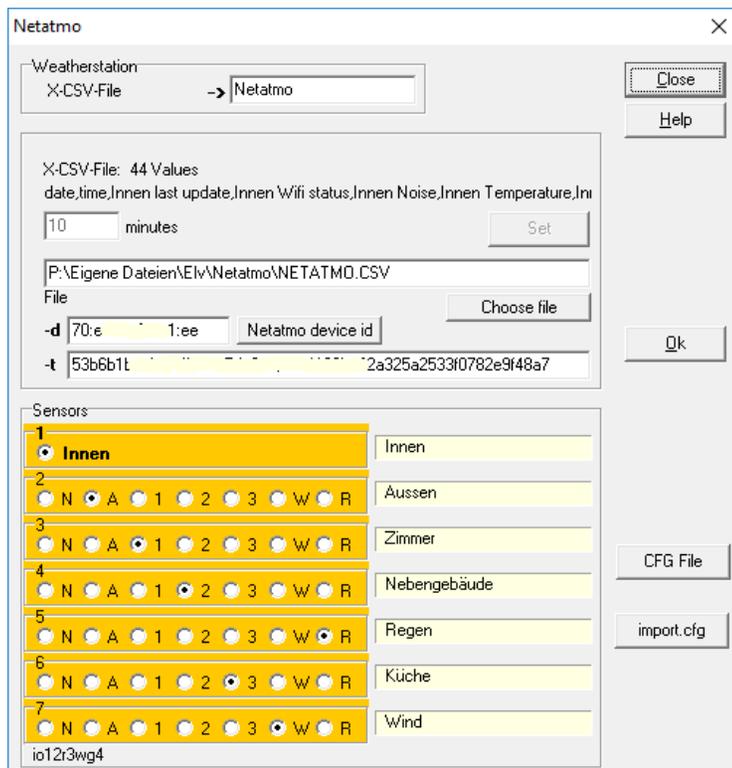
Sensorsxml - PRTG Tools Family

or a program which "fetches" the data from the NetAtmo homepage.

**Content (example): netatmox.cmd** (path -csv and -d -t should be adjusted accordingly)

```
@echo running>. \ running.txt
@. \ NetAtmoXML.exe -d = "70: ee: 50: ??: ??: ??" -t = "???????????????????????????????? | ?????????????????????????????????
????????????????" -csv = "C: \ Netatmo \ netatmo.csv"
@if exist. \ running.txt del. \ running.txt
@exit
```

You get the content for the parameters -d or -t if you start "NetAtmoXML.exe -r" or if you click on the button **"Netatmo device id"** (the file NetAtmoXML.exe has to be in the Wswin directory!)  
Wswin internally don't use these data (-d -t) - but in the future ...



With "Choose file" you select the CSV file generated by NetAtmoXML.exe or netatmox.cmd.  
This allows Wswin to configure their equipment automatically  
and then displays your configuration with your selected sensor labels.

You can also set your NetAtmo Station configuration manually.

Here you can change or specify the sensor designation for Wswin.

With "Ok" then Wswin takes over your sensor designations and existing sensors.

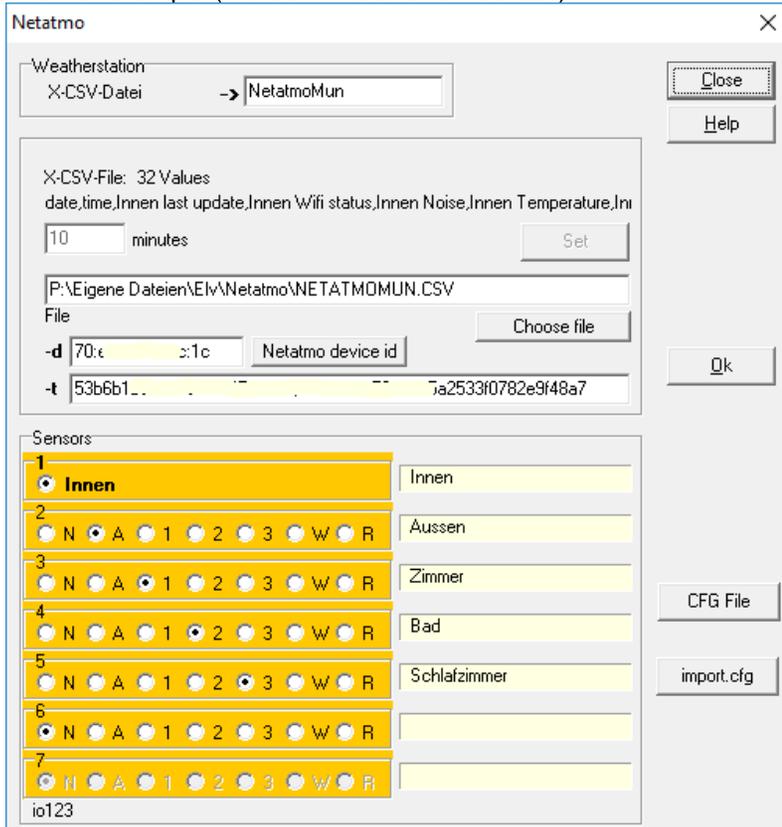
With "CFG file" Wswin creates an X-CSV config file with this data, where the file name is set according to the existing sensors. Here: **wswin\_x-csv\_Netatmo\_io12r3w.cfg**

With "import.cfg" Wswin creates a **wswin\_x-csv\_import.cfg** - which you can use directly for File Watching

Naming:

- i = internal sensor
- o = outdoor sensor
- 1 = additional sensor 1
- 2 = additional sensor 2
- r = rain sensor
- 3 = additional sensor 3
- w = wind sensor
- g = gust value available
- 4 = 24h rain value available

Another example (without wind and rain sensor)



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# Calibrate rain quantity

The rain amount measuring system has a high precision already, so that an adjustment is normally not necessary. The adjustment can however be necessary in case of very high accuracy demands in the professional use.

Finally, in order for the correct rain amount to be displayed on the screen, the calculated **calibration factor** must be put in with this function in the Operating- and Data Acquisition Software. As a default the **calibration factor** is 0,360 at the **ELV PC Wireless Interface**. This corresponds to a movement of the measurement system in the sensor.

**The calibrating-factor for the Weatherstation WMR-918/WM-918 is exactly 1,000**

## - The following calculation is valid only for ELV PC wireless interface

Before the adjustment of the rainfall sensor an already possible summed up rain amount value must be reset to nought in the Weather Station in the display mode "rain".

This is achieved by setting of the **"Zero Value for the rain amount system as ZS"** - ZS=Zählerstand - in the Operating- and Data Acquisition Software for the **PC interface** to the current rain amount value !

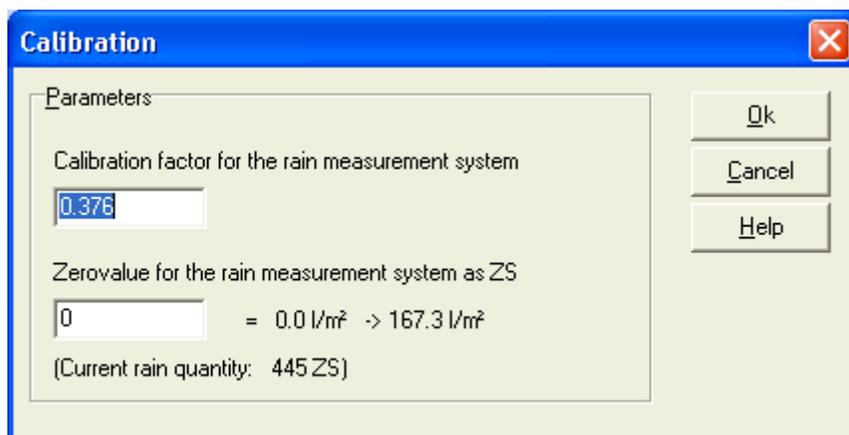
Pour then exactly one litre water into the funnel of the rainfall measuring transmitter, within an arbitrary period very slowly. The result of measurement falsifies if you pour fast. Pour the water so slowly, that no water remains in the funnel at any time!

Due to the funnel diameter of 130 mm (=5.118 in), therefore 0,0133 m<sup>2</sup> (=20.57 in<sup>2</sup>) face, a litre of water as a set point must resemble a rain amount of 75,34 liter/m<sup>2</sup>.

After having completely poured the water the actual value (display value) appears on the display, in the ideal case 75,34 l/m<sup>2</sup>. The relation of set point to actual value shows the **calibration factor**.

Since a former **calibration factor** can already have been entered, however, this must be included in the calculation. The new **calibration factor** can be calculated with the following simple **calculation**:

$$\text{New calibration factor} = \frac{\text{Set point (for example 75,34 l/m}^2\text{) } \times \text{ old calibration factor}}{\text{Actual value (Display after the filling of the water)}}$$



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# Status of wireless interface

This function is available only with connected **wireless interface!**

- Is valid only for ELV PC wireless interface

With this function the status of the sensors received by the **wireless interface can be checked**, and/or the status of the **wireless interface can be viewed**.

If for a sensor an **OK** is displayed this sensor is received without errors, on the other hand, if a value is indicated, this value indicates the number of the interferences of this sensor.

If a sensor is not received this is indicated by ---.

A "stop" shows the topicality of this sensor (only new interfaces and "Status information" chosen in options).

Even when working with 9 sensors the status of all 16 sensors is displayed - with that, the codification of additional sensors (Temp./Humidity/Barometer WS2000ID) can be checked.

If a valid DCF-time is received, the data for this purpose are displayed in the DCF-window.

A double-click in this window locks the PC clock with the DCF-time (prerequisite valid DCF-reception).

A double-click in the free status window updates the status indicator !

In case of the "recording of the weather data" and turned on "status-information" the display is updated automatically after every received data record.

Also the weather data read in last are displayed or can be changed with the relevant plausibility values when the status-information is turned on .

In the beige coloured fields the number of the validly received sensor data is displayed. The uppermost value represents the number of the receptions. These data are reset after **9999** and/or. after every start of program.

**Status Empfangsmodul**

Sensoren	41
Sens. 1	<input checked="" type="checkbox"/> OK 36
Sens. 2	<input type="checkbox"/> 5 12
Sens. 3	<input checked="" type="checkbox"/> OK 39
Sens. 4	<input checked="" type="checkbox"/> 1 30
Sens. 5	<input checked="" type="checkbox"/> OK 39
Sens. 6	<input checked="" type="checkbox"/> OK 38
Sens. 7	<input checked="" type="checkbox"/> OK 40
Sens. 8	<input checked="" type="checkbox"/> 1 32
Sens. 9	OK
Sens. 10	OK
Sens. 11	OK
Sens. 12	1
Sens. 13	OK
Sens. 14	OK
Sens. 15	1
Sens. l.	<input checked="" type="checkbox"/> OK 40
Wind	<input checked="" type="checkbox"/> OK 37
Regen	<input checked="" type="checkbox"/> OK 38

Intervallzeit: 5 min

Anzahl:  9 Sensoren  16 Sensoren

Bit\_Status:  mit DCF  mit HF  DCF synchron  LOW Batterie

Version: V 2.4

DCF: Zeit: 18:08:36 Datum: Don 28.12.2000

Block: 993 Zeit: 1

Temp. l.

Meßgröße A P.Anz PlausibelWert eingel. Wert

**Status Empfangsmodul**

Sens. 1	OK
Sens. 2	OK
Sens. 3	4
Sens. 4	OK
Sens. 5	OK
Sens. 6	OK
Sens. 7	OK
Sens. 8	1
Sens. 9	OK
Sens. 10	OK
Sens. 11	OK
Sens. 12	OK
Sens. 13	1
Sens. 14	OK
Sens. 15	OK
Sens. l.	OK
Wind	OK
Regen	OK

Intervallzeit: 11 min

Anzahl:  9 Sensoren  16 Sensoren

Bit\_Status:  mit DCF  mit HF  DCF synchron  LOW Batterie

Version: unbekannt

DCF: Zeit: 16:48:45 Datum: Fre 29.10.1999

Block: 475 Zeit: 23

### Status of the receiving module

Sensors	OK	0
S 1	<input checked="" type="checkbox"/>	0
S 2	<input type="checkbox"/>	0
S 3	<input checked="" type="checkbox"/>	0
S 4	<input type="checkbox"/>	0
S 5	<input checked="" type="checkbox"/>	0
S 6	<input type="checkbox"/>	0
S 7	<input type="checkbox"/>	0
S 8	<input type="checkbox"/>	0

S lux  1 0  
 S W/m²  ... 0

S l.  OK 0  
 Wind  OK 0  
 Rain  OK 0

Status

Interval time: 15 min

Sensor Protocol:  V1.1  V1.2

Bit Status:  with DCF  with HF  DCF synchron.

Adresse: I R W B  
7 7 7 7

Version: V 1.0

DCF: Time: 21:37:38  
Date: Fri 05/30/2003

Block: 8 Zeit: 337

Temp. l.

Meas. item      A   P.Numb   PlausiblyValue   Read value

### Status of the receiving module

Sensors	OK	0
S 1	<input checked="" type="checkbox"/>	0
S 2	<input type="checkbox"/>	0
S 3	<input checked="" type="checkbox"/>	0
S 4	<input type="checkbox"/>	0
S 5	<input checked="" type="checkbox"/>	0
S 6	<input type="checkbox"/>	0
S 7	<input type="checkbox"/>	0
S 8	<input type="checkbox"/>	0

S lux  OK 0

S l.  OK 0  
 Wind  OK 0  
 Rain  OK 0

Status

Interval time: 2 min

Sensor Protocol:  V1.1  V1.2

Bit Status:  with DCF  with HF  DCF synchron.

Adresse: I R W B  
7 7 7 7

Version: V 3.1

DCF: Time: 21:36:36  
Date: Fri 05/30/2003

Block: 281 Zeit: 2045

Temp. l.

Meas. item      A   P.Numb   PlausiblyValue   Read value

### Hardwaretest:

This test is possible only with the interfaces (V2.x) and should be called only in case of problems with the interface by "double-click". According to my experience, the reception failure rates accumulate after a hardware test until the interface "catches on" again.

Use this test only with real problems with the interface therefore.

The explanation of the errors is shown if you point with the mouse onto the error!

### Caution!

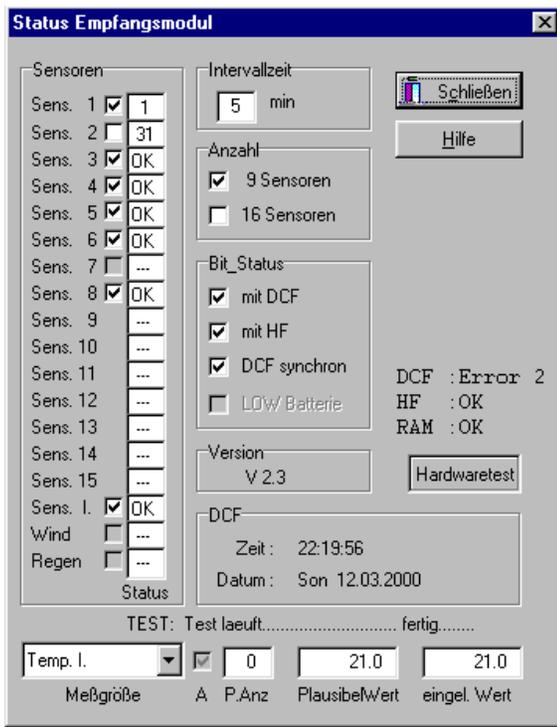
The hardware test is run by a mouse-DOUBLE-CLICK.

### Possible reports:

DCF : OK  
DCF : Error 1 -> DCF can't disabled (data input always Low)  
DCF : Error 2 -> no DCF signals received (there wasn't any level changes)

HF : OK  
HF : Error 3 -> HF can't disabled (data input always High)  
HF : Error 4 -> no HF-signals received (there wasn't any level changes)

RAM : OK  
RAM : Error 5 -> RAM not writeable (conclusion/interruption of data - or Control direction)  
Error 6 -> RAM not properly addressable in the Lo-Byte (Addressing for P8, P9 doesn't take place right)  
Error 7 -> RAM not properly addressable in the Hi-Byte (Addressing for P6, P7 doesn't take place right)



### Functions

### Contents

# Status Weather-Sensor

This function is available only with connected Weather-Sensor”!

This representation shows the sent dates of the PC-weather sensor recipient.

For every data record the receive time is dumped.

The value behind the receive time displays the time (in seconds), which time went by between the last two receptions.

Times larger 999 seconds are performed with „>999“

- this representation occurs normally after start of program and the first sensor reception.

The field „R“ is checked if the same sensor was received within 3 seconds once again, what normally the case is, if a Repeater is there or a older sensor for example ASH3!

The field „1.2“ is identifier for sensors of the release 1.2

At Rain, Brightness or Wind the first number indicates the „Address 0..7“ of the correspondingly received sensor. If no values are in the fields contained, so for that sensor no dates were received up to now.

In the turn green fields you can see, whether there was a new value available at storing of the data. -> corresponds „ActFlag“.

This Status Windows displays all dates which are sent onto the computer by the weather-sensor-recipient.

The values are always shown in the intern mode of processing, even if in the software other units have been configured.

In the right part of the window the currently saved values and its plausibility values are displayed. Here one can intervene by "hand" if necessary.

This display is only visible, if "Show status-information ..." at Options was chosen.

The values can not be changed, if "Check read-in weather data to plausibility" at Options was not chosen.

The screenshot shows a window titled "Weather-Sensor" with a menu bar containing "Status" and "more ...". The main area displays a table of sensor data:

	Received		R	1.2	8			
S i	14:32:58	161.61	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6	21.7 °C	51 %	916 hPa
S 1	14:34:26	>999	<input type="checkbox"/>	<input type="checkbox"/>	2	12.6 °C	86 %	
S 2	14:30:16	176.64	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5	13.4 °C	74 %	
S 3	14:35:26	176.23	<input type="checkbox"/>	<input type="checkbox"/>	5	16.4 °C	64 %	
S 4	14:35:12	175.76	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6	21.0 °C	57 %	
S 5	14:32:42	175.12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5	14.8 °C	68 %	
S 6	14:33:57	175.04	<input type="checkbox"/>	<input type="checkbox"/>	5	20.0 °C	60 %	
S 7	14:34:54	174.15	<input type="checkbox"/>	<input type="checkbox"/>	5	16.3 °C	53 %	
S 8	14:33:57	347.39	<input type="checkbox"/>	<input type="checkbox"/>	5	61.2 °C	0 %	
S 9	14:35:02	165.25	<input type="checkbox"/>	<input type="checkbox"/>	6	15.6 °C	65 %	
S 10	14:33:29	164.73	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6	16.5 °C	49 %	912 hPa
S 11	14:34:15	167.34	<input type="checkbox"/>	<input type="checkbox"/>	5	18.3 °C	59 %	917 hPa
S 12	14:34:00	491.07	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	18.2 °C	59 %	916 hPa
S 13	14:35:09	163.29	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5	19.3 °C	53 %	916 hPa
S 14	14:33:53	325.40	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3	17.5 °C	65 %	916 hPa
S 15	14:33:15	162.28	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4	12.5 °C	69 %	916 hPa

Below the table is a "Reset" button. To the right, there is a detailed view of the current sensor reading:

	Received		R	1.2	
Rain	7 14:35:14	169.68	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4 3167
Brightness	7 14:33:02	157.78	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6 47100 lux
Solar			<input type="checkbox"/>	<input type="checkbox"/>	0 W/m²
Wind	7 14:32:47	165.61	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6 10.6 km/h
Direction					±22.5 285 °
unknown					

At the bottom right, there are input fields for "Meas. item" (Temp. I.), "P.Num" (0), "PlausiblyValue" (21.7), and "Read value" (21.7).

If you use special-sensors, these dates are „shown“ here.

In the green field the number of the „Receivings“ is held in a fixed way.

**Coution!**

The data of this advertisement disappear during the closing of the Status Window and/or are only also brought, when the Status Window is opened of the Weather-Sensor.

The screenshot shows the 'Weather-Sensor' application window. At the top, there is a title bar with the text 'Weather-Sensor' and standard window controls. Below the title bar, there is a 'Status' dropdown menu set to 'more ...' and two buttons: 'Help' and 'Close'. The main area of the window is divided into four sections, each representing a different sensor: 'Rain', 'Solar', 'Brightness', and 'Wind'. Each section contains a table with 8 rows, indexed 0 to 7. The 'Rain' section has columns for 'Received', '1.2', and 'Rain'. The 'Solar' section has columns for 'Received', '1.2', and 'Solar'. The 'Brightness' section has columns for 'Received', '1.2', and 'Brightness'. The 'Wind' section has columns for 'Received', '1.2', and 'Wind'. The data for row 7 is as follows:

Sensor	Row	Received	1.2	Value
Rain	7	14:35:14	<input checked="" type="checkbox"/>	4 3167
Solar	7		<input type="checkbox"/>	
Brightness	7	14:33:02	<input checked="" type="checkbox"/>	3 47100
Wind	7	14:35:33	<input checked="" type="checkbox"/>	3 9.8 300 3

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# Status Weather Station (WMR-918/918N/968/928N)

This function is available only with connected and found Weather Station!

- Is valid only for Weather Station WMR-918/968/928 (not WM-918)

This representation displays received data from of the Weather Station WMR918/968.

For every data record the reception time is shown.

If a field contains no values, no data was received for it up to now.

The value behind the time, indicates the period in seconds which lay between two receptions.

**This status indicator displays all data, which was sent from the Weather Station to the computer.**

The data are always displayed in the **internal mode of processing**, even if in the software other units have been configured.

The wind-speed-values are sent in "**m/s**", these values are converted into the internal mode of processing of this software (**km/h**).

The displays minutes-/hour status show the time values of the Weather Station's clock.

In case of larger deviations the PC clock should be corrected and/or this software can automatically correct this with the Option "**Synchronize PC clock with DCF**".

**In the lower part of the window the currently saved values and its plausibility values are displayed. Here one can intervene by "hand" if necessary.**

This display is only visible, if "Show status-information ..." at Options was chosen.

The values can not be changed, if "Check read-in weather data to plausibility" at Options was not chosen.

## Note:

Values not equal to "**00**" in the fields "**St**" at the sensors indicate reception problems and/or weak batteries of the corresponding sensor.

A value of "**8x**" in the field "**St**" at "minute/hour state" is sign for battery-indicator for Weather Station.

A value of "**4x, 6x, 8x or Cx**" in the field "**St**" at the sensors is a sign for weak batteries (Battery indicator) – the bigger the value, the less voltage of the batteries is available.

The screenshot shows a software window titled "Status Weatherstation WMR-918N". It contains several data fields organized into sections:

- Minute state:** Received: 10:46:00 PM, St: 00, 46.min
- Hour state:** Received: 21:00:01, St: 00, 22h 06.01.05
- Weather forecast:** sunny, 00 00, 51 C1 00 94 06
- Indoor:** 10:46:14 PM, 38 00, Temperature: 20.9°C, Humidity: 42.0%, Dew point: 8°C, Barometer: 937hPa, Sealevel reference: 94.0 (+600)
- Outdoor:** 10:45:51 PM, 37 01, Temperature: 0.9°C, Humidity: 98.0%, Dew point: 1°C
- Sensor 1:** 10:45:55 PM, 39 00, Temperature: 2.0°C, Humidity: 93.0%, Dew point: 1°C
- Sensor 2:** 10:46:18 PM, 41 50, Temperature: -24.7°C, Humidity: 95.0%, Dew point: 0°C
- Sensor 3:** 10:46:40 PM, 129 00, Temperature: 8.6°C, Humidity: 60.0%, Dew point: 2°C
- Wind:** 10:46:34 PM, 15 00, Direction: 10°, Wind gust: 5.0km/h, Average: 6.5km/h, Wind chill: 1°C
- Rain:** 10:46:18 PM, 49 00, Total: 68mm, Rate: 0.0mm/h, yesterday: 5.0mm, Reset: 11:54 03.01.05 09

At the bottom, there is a table for "Temp. l." with columns: Meas. item, P.Numb, PlausiblyValue, Read value. The values shown are 0, 20.9, and 20.9.

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# Status VantagePro

This function is available only with connected Weather Station!

This representation shows all received data of the weather-station VantagePro/VantagePro2.

With the button „GIF“ you can make a Hardcopy graphic from each page of the status screen:  
 here Status1\_VantagePro2.gif... Status7\_VantagePro2.gif

With the button "High / Low" the high/low values of day, month and year are read from the VantagePro as well as one can update these data.

Automatical happens to this with selection one of the TAB's [High day](#), [Low day](#), [HiLow month](#) or [HiLow year](#) and the data was not yet read.

With the button „Clear alarm" - only active, if an alarm is on the agenda - you can cause the alarm again.

The button „Update“ is only visible, if recording is not active.  
 You can then update this view with the newest values from the station.

## Representation of Reception-data, Battery statuses, Barometer Calibration values, Receivers and Firmware version

### Lamps on / Lamps off

With using of this button you can the background-illumination of the VantagePro over the software turn on - as well as turn off also again. With what, the program cannot recognize whether already the background-illumination is switched on and assumes therefore the state is switched off for that reason. This function normally requires a powersupply of the VantagePro over the plug-power adapter.

The screenshot shows the 'Status Weatherstation VantagePro2 Plus' window. It features a menu bar with 'GIF', 'High / Low', 'Clear Alarm', 'Help', and 'Close'. Below the menu bar are tabs for 'Values', 'Console', 'Alarm', 'High Day', 'Low Day', 'HiLow Month', and 'HiLow Year'. The main area is divided into several sections:

- Total Packets:** 19176
- Total MisPackets:** 353
- Num Resync:** 0
- Largest in Row:** 752
- CRC Errors:** 112
- ISS Reception:** 98.19 %
- Console Battery:** 4.73 V
- Transmitter Batterie Status:** 8.....4.....1 00000000 all OK!
- DavisTalk Transmitter:** 8.....4.....1 10000111
- ReTansmit:** Off
- Barometer CAL Data:**
  - Barometer: 29.867 inHg
  - Elevation: 2631 ft
  - Dew Point: 87 °F
  - Virtual Temp: 88 °F
  - C (Hum. corr. factor): 32
  - R (Correction ratio): 1.099
  - GAIN: 1.541
  - BARCAL: 0.000 inHg
  - OFFSET: 18.375 inHg
  - Barometer abs.: 27.177 inHg
- Station Data Table:**

Station	Station Name	H/T
Station 1	ISS Station	0 / 00
Station 2	Temperature/Humidity	0 / 10
Station 3	Leaf Station	0 / --
Station 4	No station - OFF	0 / --
Station 5	No station - OFF	0 / --
Station 6	No station - OFF	0 / --
Station 7	No station - OFF	0 / --
Station 8	Soil Station	0 / --

At the bottom left, it says 'Firmware: Tuesday, January 04, 2005'. At the bottom right, there is a 'Lamps on' button.

### Alarm

Representation of the active alarms (here high inside temperature and Time Alarm)

The screenshot shows the 'Alarm' configuration screen in the 'Status Weatherstation VantagePro2 Plus' software. The 'Alarm' tab is selected. The screen is organized into several columns of checkboxes for different alarm types:

- Indoor:**
  - Falling bar trend
  - Rising bar trend
  - Low inside temp
  - High inside temp
  - Low inside hum
  - High inside hum
  - Time Alarm
- Rain/ET:**
  - High rain rate
  - 15 min rain
  - 24 hour rain
  - Storm total rain
  - Daily ET
- Outdoor 1:**
  - Low outside temp
  - High outside temp
  - Wind speed
  - 10 min avg speed
  - Low dewpoint
  - High dewpoint
  - High heat
  - Low wind chill
- Outdoor 2:**
  - High THSW
  - High solar rad
  - High UV
  - UV Dose
  - Low outside hum
  - High outside hum
- Temp/Hum 2+3:**
  - Low temp 2
  - High temp 2
  - Low hum 2
  - High hum 2
  - Low temp 3
  - High temp 3
  - Low hum 3
  - High hum 3
- Temp/Hum 4+5:**
  - Low temp 4
  - High temp 4
  - Low hum 4
  - High hum 4
  - Low temp 5
  - High temp 5
  - Low hum 5
  - High hum 5
- Temp/Hum 6+7:**
  - Low temp 6
  - High temp 6
  - Low hum 6
  - High hum 6
  - Low temp 7
  - High temp 7
  - Low hum 7
  - High hum 7
- Temp/Hum 8:**
  - Low temp 8
  - High temp 8
  - Low hum 8
  - High hum 8
- Soil/Leaf 1:**
  - Low Leaf wetness
  - High Leaf wetness
  - Low Soil moisture
  - High Soil moisture
  - Low Leaf temp
  - High Leaf temp
  - Low Soil temp
  - High Soil temp
- Soil/Leaf 2:**
  - Low Leaf wetness
  - High Leaf wetness
  - Low Soil moisture
  - High Soil moisture
  - Low Leaf temp
  - High Leaf temp
  - Low Soil temp
  - High Soil temp
- Soil/Leaf 3:**
  - Low Leaf wetness
  - High Leaf wetness
  - Low Soil moisture
  - High Soil moisture
  - Low Leaf temp
  - High Leaf temp
  - Low Soil temp
  - High Soil temp
- Soil/Leaf 4:**
  - Low Leaf wetness
  - High Leaf wetness
  - Low Soil moisture
  - High Soil moisture
  - Low Leaf temp
  - High Leaf temp
  - Low Soil temp
  - High Soil temp

## Representation of the high / low day, month and year's value

At the day high/low values additionally the point in time for this event is represented.

The top-left screenshot shows the 'High Day' view. It displays various weather parameters for the current day, including indoor and outdoor temperature and humidity, sensor data (Sensor 1-8), soil moisture, barometer, solar, UV, wind, rain, and dew point. The time is 1:58 PM on 8/24/2005.

The top-right screenshot shows the 'Low Day' view, displaying similar weather parameters but for the lowest values recorded during the day. The time is also 1:58 PM on 8/24/2005.

The bottom-left screenshot shows the 'Month' view, displaying high and low values for various weather parameters over the month of September 2005. The time is 12:10 PM on 9/2/2005.

The bottom-right screenshot shows the 'Year' view, displaying high and low values for various weather parameters over the year 2005. The time is also 12:10 PM on 9/2/2005.

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# Status TE923

This function is available only with connected Weather Station!

This representation shows all received data of the weather-station TE923/TE923/WXR-815 ...

With the button „GIF“ you can make a Hardcopy graphic from each page of the status screen:  
**Status1\_TE923 (Mebus,Irox,Honeywell).gif ... Status4\_TE923 (Mebus,Irox,Honeywell).gif**

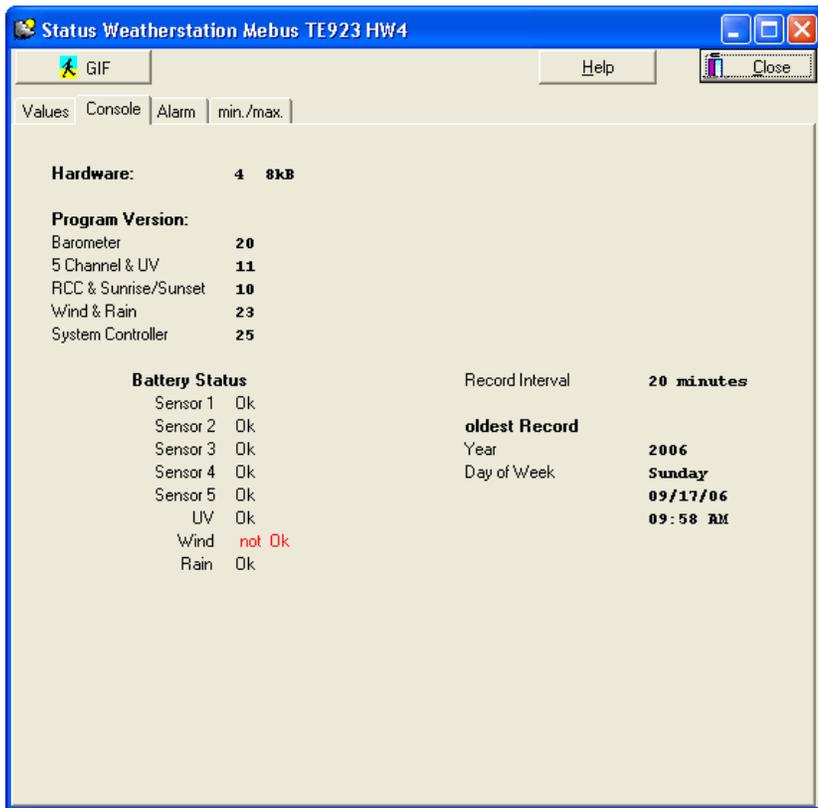
The button „Update“ you can then update this view with the newest values from the station.

With **hardware 1** the data always represented the most current record, with hardware **version HW2.. 4** always the real time-record (1 minutes) is represented.

At the **UV- Index**, the original-value (**id=9**) and the **standardized value** (VantagePro) is represented.  
 At Wind chill is the original value come form the weather station (**id=8**) is represented and the **back reckoned value** (**id=7**). without wind-influence.

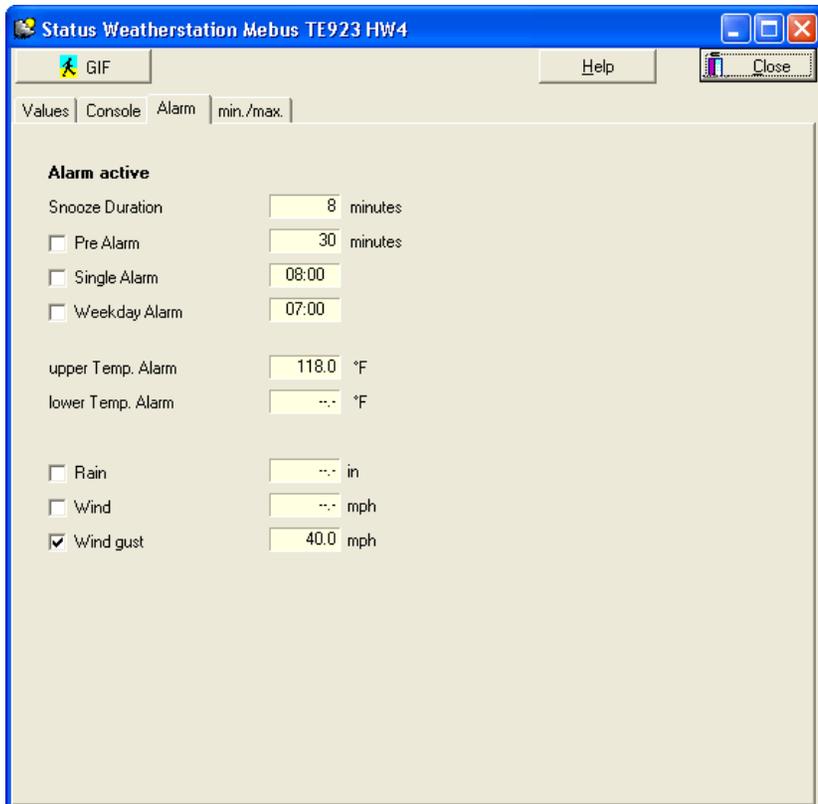
h	Barometer	Montag
0	29.88 inHg	18:09:06
-1	29.86 inHg	18:56
-2	29.85 inHg	
-3	29.85 inHg	
-4	29.86 inHg	
-5	29.86 inHg	
-6	29.87 inHg	
-7	29.87 inHg	
-8	29.87 inHg	
-9	29.86 inHg	
-10	29.86 inHg	
-11	29.85 inHg	
-12	29.84 inHg	
-13	29.84 inHg	
-14	29.84 inHg	
-15	29.83 inHg	
-16	29.85 inHg	
-17	29.85 inHg	
-18	29.83 inHg	
-19	29.83 inHg	
-20	29.82 inHg	
-21	29.82 inHg	
-22	29.81 inHg	
-23	29.78 inHg	
-24	29.79 inHg	

Representation of hardware version, storage-extension, battery - status and last existing record



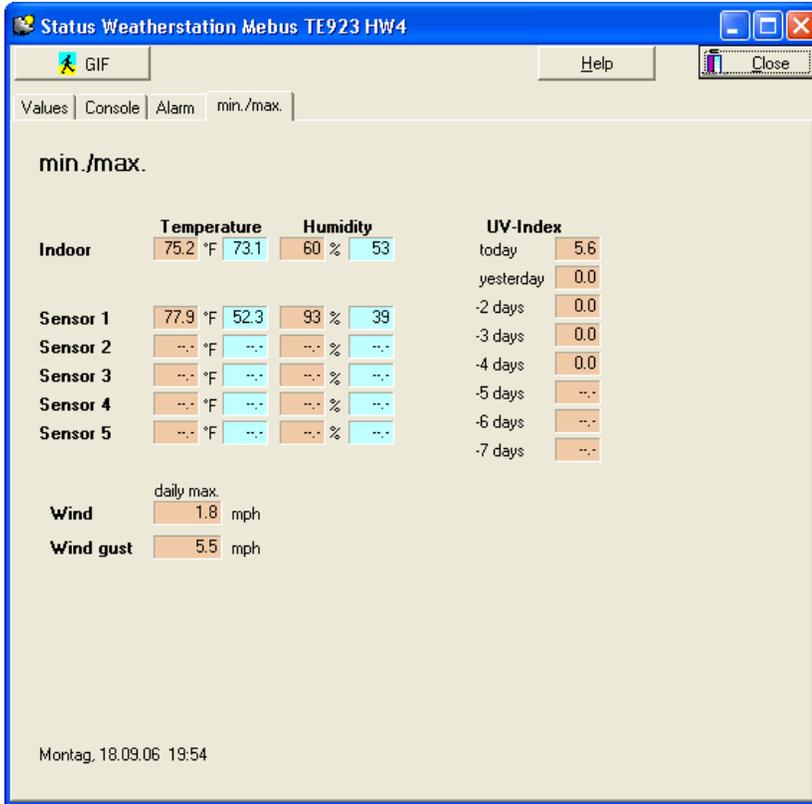
## Alarms

Representation of the alarm settings in the weather station

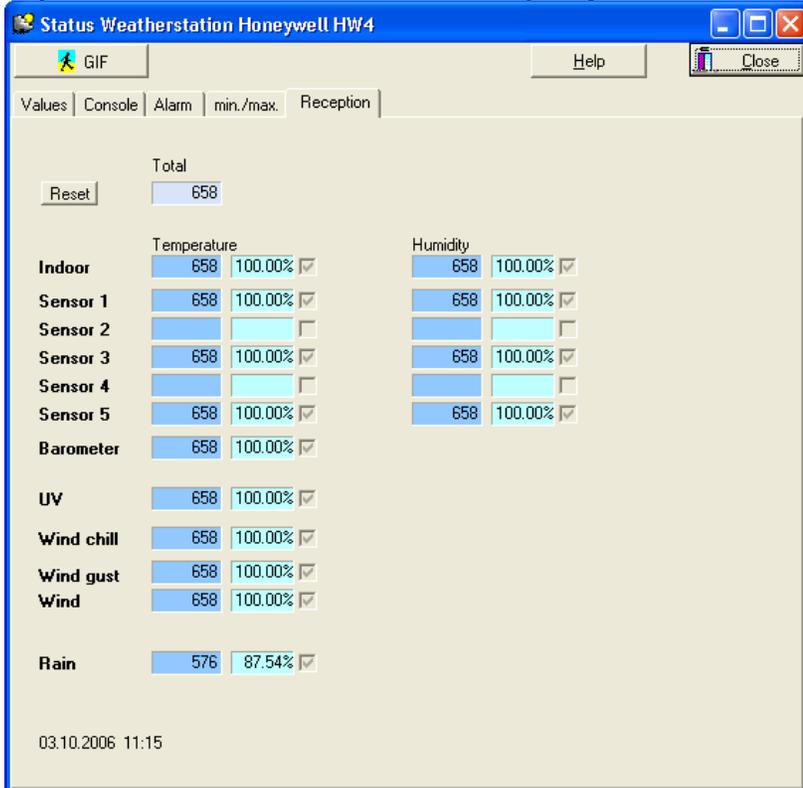


## Representation the minimum and maximum values in the weather station

At wind, the data refer to the current day!



## Representation of the received data and quality



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# κ Status NetAtmo

Received  
25.03.2018 10:02

	Sec	RF	Bat	Temperature	Humidity	Co2	Barometer	volume
<b>Indoor</b>	290	57		23.4 °C	27 %	835 ppm	1004.1 hPa	38 dB
<b>Outdoor</b>	311	27	93	2.3 °C	72 %		Modul	
<b>Sensor 1</b>	311	40	82	17.6 °C	41 %	1173 ppm	Zimmer	
<b>Sensor 2</b>	305	14	75	1.2 °C	76 %	423 ppm	Nebengebäude	
<b>Sensor 3</b>	305	46	100	18.5 °C	38 %	1282 ppm	Küche	
<b>Wind</b>	292	22	71	Average 2.0 km/h	Direction 315 °	Wind gust 6.0 km/h	Wind gust Direction 315 °	
<b>Rain</b>	298	32	52	current 0.0 l/m²	Netatmo 0.000 l/m²	24 h 0.0 l/m²		

Temp. I. 0 23.4 23.4 10:02 25.03.2018  
Meas. item P.Numb PlausiblyValue Read value

Explanation:

Sec last reception before seconds  
RF signal strength  
Bat battery charge in percent

The display of the plausibility values is only displayed, if the plausibility control is activated (which should be!)

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# Synchronize PC-time

**This function is available only with connected wireless interface!**  
**- Is valid only for ELV PC wireless interface**

The Weather Station has an integrated DCF-receiver which guarantees the correct display of the date and the time in the display at any time. A perfect reception of the DCF-signal is condition for that however.

By calling this function the current time and the date can be set to the PC clock after a security query . If no correct DCF-reception is possible, a corresponding note is shown on the screen.

With the 32-bit application "WSWIN32.EXE" from Windows-NT/2000/Vista/Win7/Win8.x/Win10 the user must have the right to change the time - as a default the users do not have this right - only administrators and main users have this right !!

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# Com-Port

If this function is disabled, you have chosen at InterfaceTyp... "without interface" !

This function allows the selection of the serial port to which the wireless interface is supposed to be connected. The connection to the 2nd serial interface (COM 2) is standard designated.

The parameters of the interface are tuned by the Operating- and Data Acquisition Software automatically.

## **WS2000-PC Wireless Interface parameter:**

9600 bauds, 8 data bits, 2 stop bits and even parity

## **Parameters Weather Stations WMR-918/968 and WM-918:**

9600 bauds, 8 data bits, 1 stop bit and no parity

## **WS2500(-PC) and Weather-Sensor Interface parameter:**

19200 bauds, 8 data bits, 2 stop bits and even parity

## **VantagePro – VantagePro2:**

19200 bauds, 8 data bits, 1 stop bit and no parity

Although VantagePro weather-station also supports another baud-rate, that is intended not in WsWin!

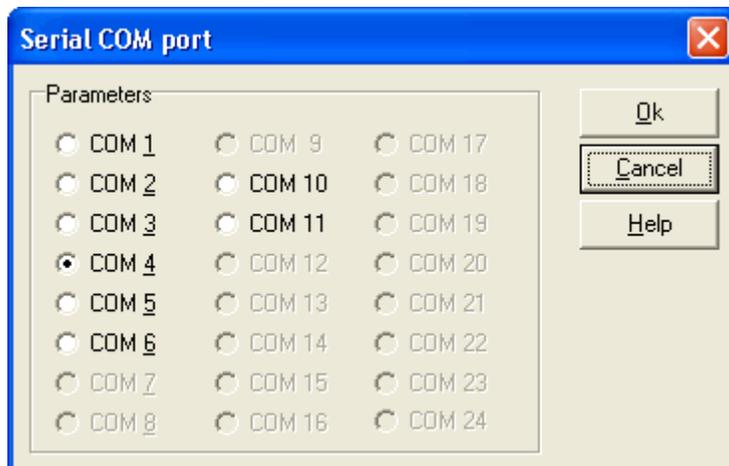
After the confirmation of the selection the wireless interface/Weather Station is searched at the chosen com port. If the wireless interface was not found, a corresponding note is shown.

Not available com ports are shown with a grey background and can not be selected.

If the wireless interface is not found during the start of the program, the com port must be chosen here once again!

Changes in V2.83.0:

Is an once chosen interface not more available, the next available interface is changed to up to now automatic. From V2.83.0 that is still used only with the interfaces COM 1..2, higher interfaces are not rearranged more automatically.



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# Interface Type ...

## WS2000-PC V1.0

Old ELV wireless interface (not sold anymore)

## WS2000-PC V2.x

The current wireless interfaces (currently V2.5)

## WS2500 (-PC)

Weather station WS2500 (at this time V1.0/V1.1) and/or wireless interface (at this time V3.1)

## Weather-Sensor

Settings for PC-Weather-Sensor-Receiver

## WM-918

Weather Station WM-918 (no status information available !!!)

## WMR-918/968

Weather Station WMR-918/968

## VantagePro

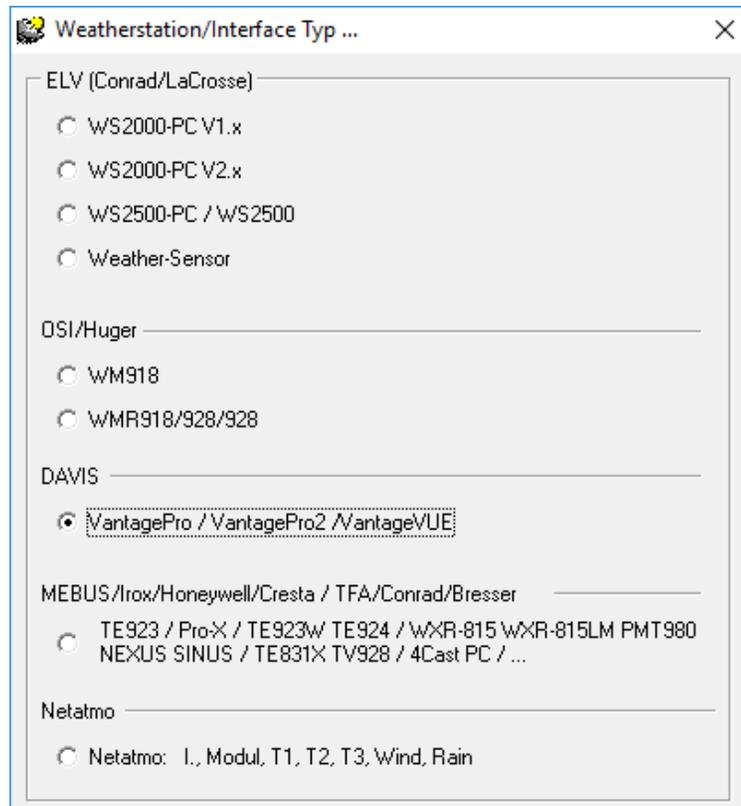
VantagePro as well as Weatherlink-Software

## TE923

Mebus/Irox/Honeywell/Cresta/TFA/Conrad/Bresser/RSB

## NetAtmo

Internet weather station NetAtmo (Data is retrieved from the Netatmo website!)



### **File-Watching**

For the takeover of weather data, so as would be the "weather station" directly connected.

### **without Wireless-Interface**

Necessary for interface change, or if there is no interface available

### **Note!**

As a default ELV wireless interfaces are searched for at the serial interfaces, and provided that they are found, the correct interface model (V1.0/V2.x) is preselected.

With the manual choice the corresponding sensor types, -number are preselected and are available for further work.

### **Operation without wireless interface**

If you work without wireless interface you should choose this option. During the start of the program no wireless interface is searched for at the chosen COM-port.

When choosing this option, the functions which require a communication via the serial interface are not selectable anymore.

### **Caution!**

A change between different interfaces / Weather Stations is only possible if "**without wireless interface**" was chosen before.

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# File watching

With this function you have the possibility a so-called "Pseudo-Online-Operation (with WS2000, WS2500, WS2300) practise -> to employ file watching of these stations and/or possibility to use a CSV file as value handicap.

The import interface "**CSV file**" - needs Metric values (**°C,hPa,mm,km/h**) and the station air pressure (not related to sea level) - if WsWin makes this file, you must use the **WAP. TXT-** "row" (not custom. txt- "row") However, X-CSV-File. doesn't involve here, you are completely independent.

- same behavior, how one of these stations would be ONLINE connected.
  - with possibility of the sensor correction (but no plausibility check)
  - at the WS2300 are taken over for the erroneous values, the previous, valid values ( provided that which ones were available ).
- **with that, you have the possibility, to duplicate your "weather station" !!**
- **All function are available, as near a directly connected weather station.**

With the adjustable time value (0 .. 10 s) you can initiate the program, delayed around this time, to react to the change.

0 - > Switched off!

At the weather stations WS2300 this time can be set to "0" (the HeavyWeather software approves a simultaneous file-access).

At the WS2500 (&WS2000) stations this time must be on approx. 3 s and more highly are set, the PC\_WS2500-software of ELV does not approve any simultaneous file access, with that, one avoids the error message of this software "file access error".

Under Windows95/98/ME this value should stand least at 1 s - otherwise it can happen, that the "file modification" isn't imposed.

**Further main settings for the BIN-files (for example the fixed handicap of the format) are under „Converting weather data“, "Rel. air pressure (at WS2300)" to carry out!**

## Model of a CSV watching file: (4 lines)

```
1) %customfile=d:\Eigene Dateien\elv\proj\watch\import.csv%
2) ,,1,2,3,4,5,6,7,8,9,17,18,19,20,21,22,23,24,25,33,34,35,36
3) %unit_off%%alwaysmetric_on%%alwaysseppoint_on%%ws_date%,%ws_time%,%curval[1]%,%curval[2]%,%curval[3]%,%curval[4]%,%curval[5]%,%curval[6]%,%curval[7]%,%curval[8]%,%curval[9]%,%curval[17]%,%curval[18]%,%curval[19]%,%curval[20]%,%curval[21]%,%curval[22]%,%curval[23]%,%curval[24]%,%curval[25]%,%baro_station%,%curval[34]%,%curval[35]%,%curval[36]%
4) %unit_on%%alwaysmetric_off%%alwaysseppoint_off%
```

## Explanation about the CSV-file:

Linie 1) Handicap of the result file (can contain also a path)

Linie 2) Indices of the sensors (see also there)- Consider special case "air pressure"

Linie 3) Control variable: absolutely necessary: **unit\_off, alwaysmetric\_on, alwaysseppoint\_on**  
Date, Time and then the values, the air pressure must be defaulted as **station air pressure**

Linie 4) with that, it is put back again onto the "default"-settings.

## Result-File: (Example)

```
,,1,2,3,4,5,6,7,8,9,17,18,19,20,21,22,23,24,25,33,34,35,36
20.10.2002,00:56,20.7,4.0,5.5,18.9,19.2,17.5,21.8,0.0,20.0,43,93,81,62,53,57,45,0,46,954.0,0.0,0.0,360
```

## Alernate Result-File: (Example)

```
,,1,2,3,4,5,6,7,8,9,17,18,19,20,21,22,23,24,25,133,34,35,36
20.10.2002,00:56,20.7,4.0,5.5,18.9,19.2,17.5,21.8,0.0,20.0,43,93,81,62,53,57,45,0,46,1013.2,0.0,0.0,360
```

If only the Sea-Level air pressure is available to you, can / must you control that in the index for air pressure, increasing around **100=133**

For the „Watching“ two options are necessary:

- 1) here „Watching active“ activates

## 2) Recording switched on.

With **X-CSV-File** the File **wswin\_x-csv\_import.cfg** **must exist in the Wswin-folder** and in this file must also exist a valid Import file. That is you must have imported a X-CSV File successfully already once previously!!

When the file (CSV or BIN) isn't recognized or in an invalid form is defaulted, onto that with "no PC\_WS file" is pointed out.

This function can **not be activated** then.

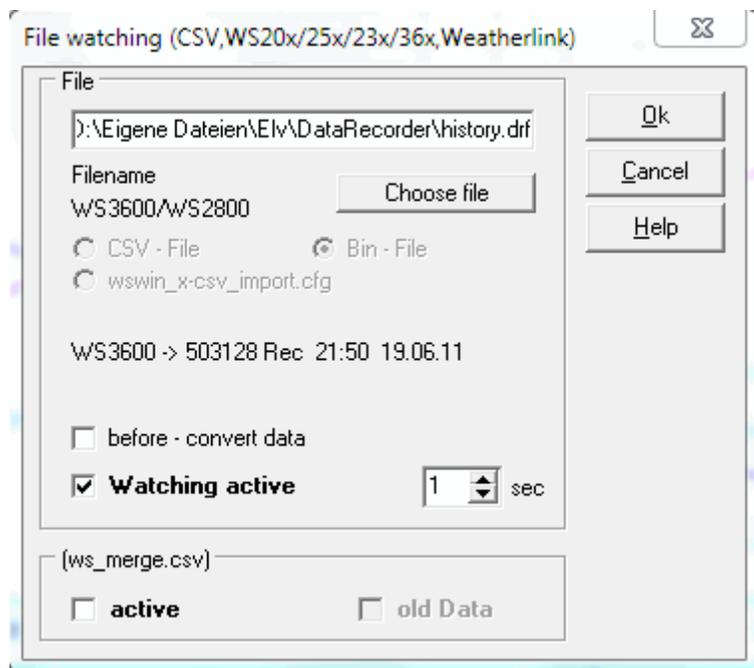
While activating of "**Watching active**" also „**without interface**" is readjusted automatically on that!

### „before – convert data“

With that, you have the possibility (with simultaneously chosen option "Automatic start of recording at start") - look also under Options - to take over these dates automatically, that is without going before onto "Converting Weather data".

Their dates always remain with that on the current state (with Online/data logger operation).

**This option is available only in the registered version !**



### Restriction:

If the file to be watched is on a network drive and the network drive is **decollated** during "Recording and/or File Watching" and set up later again, so **the program must be ended and new started**, so that the check functions work again correctly and/or a file-change is recognized.

With **X-CSV**, the data file is copied previously and with the copied data file, the import-procedure is carried out., to avoid about data file-access-conflicts. **In contrast to the CSV-Import, the data file is not deleted!**

## Please heed absolutely following:

### If the automatic takeover doesn't work:

With WsWin stops the record and under File, Converting weather data as well as Import weather data the data "manually" takes on - it is possibly included necessary, an already existing monthly WsWin file to delete previously as well as to rename, so that all data can be adopted!

### If the whole file always is gone through about being converted when starting:

The program does not know the starting point! Let therefore at least 1 data record be taken over in the mode „Recording“ with the File-Watching. With that, the program knows at the next autom. starting the position and begins then immediately there.

## Problem: Program doesn't recognize the file alteration through the master program:

- ❖ Under Windows95, this function seems not to generally work. I cannot check this, because I don't have this operation system available to the testing
- ❖ If, when starting of the file watching ("recording start") the system utilization with 100 percent is and doesn't go back to a normal value after maximum 10sec either, "recording stop" and tries again.  
My experience: **With this behavior, a file alteration is not recognized!**

One can normally avoid this behavior, if one starts the File-Watching if the **master-program** does not execute just any **file-modification**.

### Alternate File-Watching:

Click on Filename - "*Filename*" then is represented in italics, after that you must close/restart the program. In some cases, the File-Watching then works with it.

If at Weatherlink the file modification is recognized by the Weatherlink Software only during the termination, so attempt the following:

Let the Weatherlink Software according to the storing interval in the Weather station plus a minute (for example min Storing interval=5) with a schedule program (for example „Tasks“ under Windows) with timing diagram 00:01, 00:06, 00:11, to start 00:16 and so forth with following program start:

```
start /B /MIN /d"C:\Weatherlink" C:\WeatherLink\WeatherLink54V.exe Home -d
```

Matching the path **C:\Weatherlink**, the program name **Weatherlink54V.exe** and the station name **Home** onto the own factors of course in this case.

From V2.85.0.0, there is also the possibility to handle the File-Watching over the so-called Pause operation. Here, it becomes after the set times (5 minutes.. 24 hours) from the program looked, whether a file alteration emerged.

Since this function is Windows - independent, with it you should get the success in any case.

## (ws\_merge.csv)

As well activating of this option at every storage of a new record is looked for a file „**ws\_merge.csv**“ in the data folder. If such a file is found, this becomes appraised and "overcharges" existing values possibly or adds new "values."

If the ID's =135(wind), 136(wind direction), 238(brightness), 141(UV), 142(solar radiation, 145 (wind gusts), the merge data are taken over only if there are no online data

The format of this file must correspond to the format of an „watching“ CSV- file.  
(X-CSV isn't here supported)

If File-Watching and additionally ws\_merge.csv is active and the storage interval in the file to be monitored is smaller - therefore, more data records must be taken over - the option "old data" can be used to bridge gaps for wind, wind direction, wind gust, UV, solar radiation ", with this the last data values are then continued.

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# Weather condition

Please consider the request the assumption for the full use of this function!

With the call always the current time-/date values are set.  
With weather conditions you can choose different options.

With the first call the time zone is set to the first corresponded entry found for current UTC time (in Germany to **+01:00 CET Central European Time**), should be checked by everyone and corrected.

## Caution !

If the option was chosen "**Take over measured values from weather station**", the choice of other time/date is deactivated.

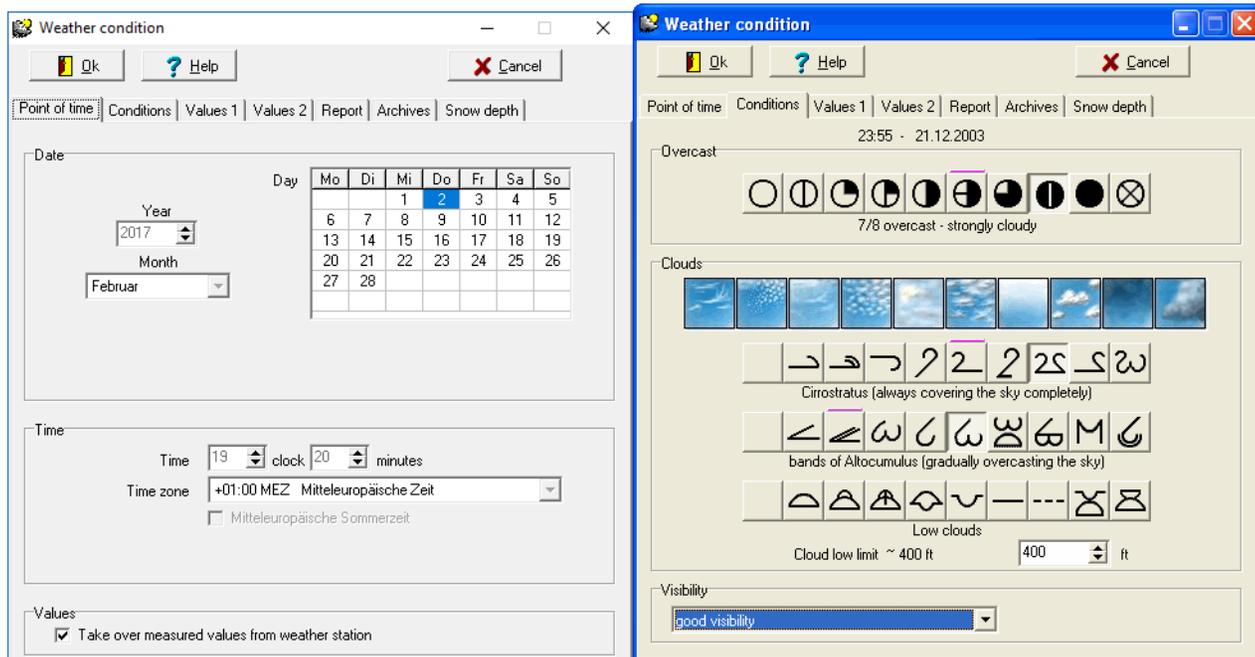
-> **Modification** (from V2.83.0): if you set the „**Cursor**“ on a certain position (=Time), this dates are used (formerly always the last data record).

The function can be used also **without available weather station** to the write-out and administration of the own weather observations.

Then you should disable this option.

At the „Internet-Update“ no dates are sent for cloud, ceiling and so forth - therefore all dates that are to be preset by the user.

**With autom. Internet Update the dates are not stored in the „wsarchiv.mdb-database“!**



A "violet" beam signals your last selection.

Here can you the select overcast, the clouds and the cloud low limit.

If you want **fast** deselect the selected "buttons", you simply accrete next to those ones available buttons, the "pressed" buttons are put back then.

## Consider !

The state of sea is determined automatically from the wind

The "existing" sensor is used for sun radiation  
- can be brightness (lux) or be solar radiation (W/m<sup>2</sup>).

For the rain number one can choose during the Internet update, whether text (insignificant, light, moderate, strong fallout) or the value for the rain number of the last hour „sent“ becomes.

If a rain duration sensor is available and the hourly rain number is zero but the duration is not equal to zero, „insignificant“ is always transmitted so as a rain number.

Comment about the snow depth:

The snow depth is transferred also to wetterarchiv.de, when the modification and/or acknowledgement of the **snow depth** is not older than 2 days.

The acknowledgement/modification can occur through:

- ✓ Here leave with OK
- ✓ Under Report with Report or Save or S+R
- ✓ With using of the file ws\_controll.cfg

The image displays two side-by-side screenshots of the 'Weather condition' dialog box. The left window shows the 'Precipitation' section with 'Amount' set to 0.000 in, 'Typ' set to '(no precipitation)', and 'Duration' set to '(no precipitation)'. The 'Wind' section shows 'Wind direction' as 22 degrees and 'Wind force' as 6.2 mph. The 'State of sea' is set to '2 - smooth wavelets sea'. The right window shows the 'Barometer' section with 'Barometer' at 29.89 inHg and 'Air pressure tendency' at -0.02 inHg. The 'Temperature' section shows 'current temperature' at 39.7 F, 'max. temperature' at 52.5 F, and 'min. temperature' at 29.5 F. The 'Air humidity' is set to 71% and 'Solar radiation' is set to 0 W/m².

In this window you have the possibility to save your inputs in a MS-Access database, and/or only send to <http://www.wetterarchiv.de> and/or [www.awekas.at](http://www.awekas.at) or, however, save and send simultaneously.

If you have already sent dates to "Wetterarchiv", then a additional botton will be visible. that makes possible to, to access directly to your personal dates on "Wetterarchiv".

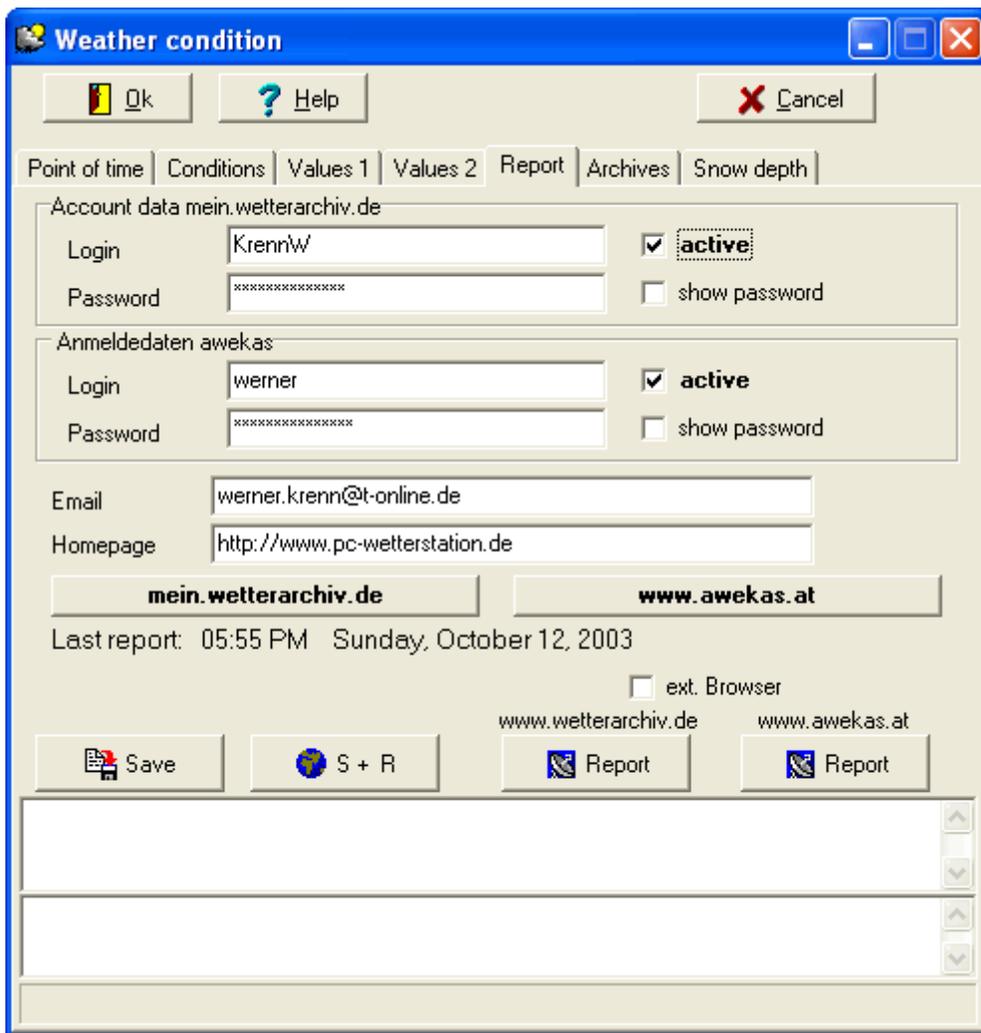
For the sending of dates, you must have entered your **personal station dates** under Location and fill your account data here.

The use of this service is completely free. With the dates which you enter here an Account is arranged during the first sending for you.

If your dates were incorporated successfully, you receive the response "**SUCCESS**" or "**OK**". When you didn't choose the option "ext. Browser", the dates are transmitted with the integrated HTML browser (resource- and saving storerooms).

You get the access data for Awekas at <http://www.awekas.at> or over the corresponding button. Please put this data then down accordingly here. Without this you cannot send any data to AWEKAS.

**Caution!** You must from V2.90.0 switches your Logon „**active**“, otherwise the data are broadcasted no more automatically over the timing control.



Here you can regard or print your weather archive-dates (at database use) or only the last send /stored data.

### Consider:

The delivered database-file "**wsarchiv0.mdb**" must be under "**wsarchiv.mdb**" in the program-folder stored.

Who would like to use the full functionality of the weather situation announcements, that is wants to store also the dates in a MS-Access database, must ADO (Data ActiveX objects) have installed and/or. the relevant JET-Engine 4.0.

For this purpose, you can find under <https://www.pc-wetterstation.de/adotest.exe> a check program, which verifies whether this data base engine is installed.

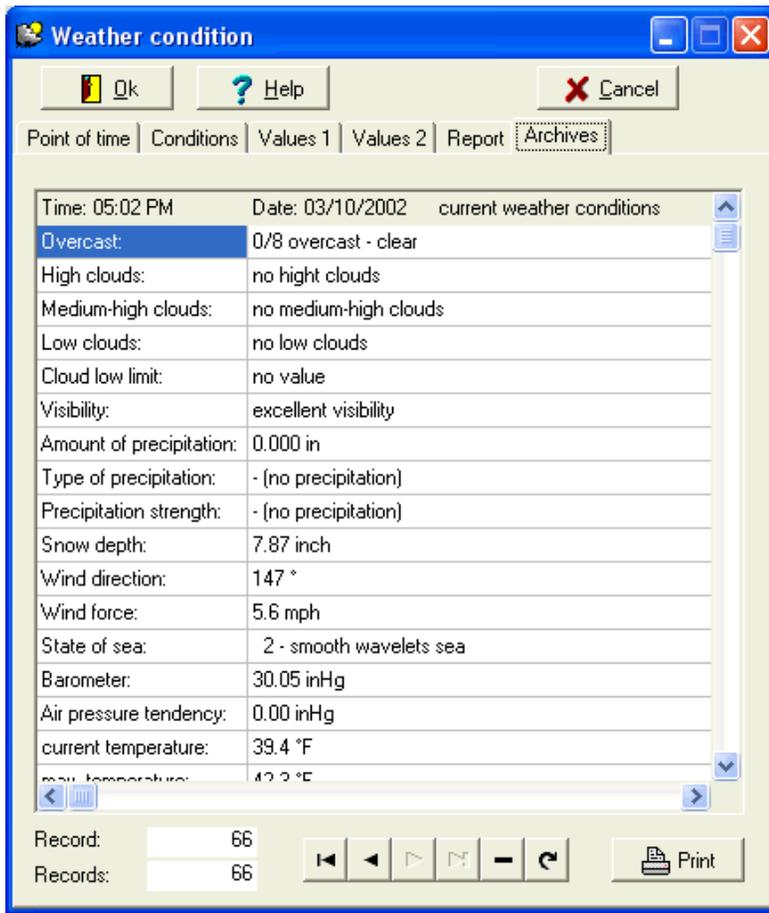
User of Windows ME or Windows 2000 can pass this test, by this Operating-Systems ADO belong to the System. You has MS-Access installed, at that this Engine should be also available.

A missing ADO (Jet-Engine 4.0 SP3) can you download there:

[https://www.pc-wetterstation.de/jet40sp3\\_comp\\_en.exe](https://www.pc-wetterstation.de/jet40sp3_comp_en.exe)

or direct from Microsoft: [http://www.microsoft.com/data/download\\_JetSP3.htm](http://www.microsoft.com/data/download_JetSP3.htm)

If the database is not found in the program folder and/or ADO is not available, the database functions are deactivated.



**Reference!**

If you don't "find" anymore your values in the dababase, so you should "compresses" it under Access97 (only!!!)

# Snow depth

The graphics show only existing data from the **wsarchiv.mdb** data base.  
I.e. **no representation** can take place without using of this data base!

When storing, the chosen year is added to the file name.

Example for year 2004: -> **snow\_y2004.gif**.

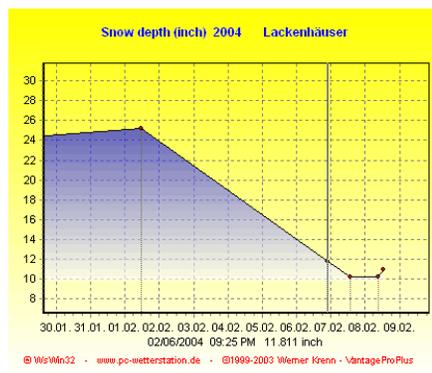
Existing snow depth graphics can be selected also in the weather data selection menu.



**You can also „zoom in“ in the graphics:**

You position the mouse onto the wanted **left Begin**, holds the left mouse button pressed and raises the zoom area with **pressed mouse button**.

The „shown“ area becomes then the new view-period.

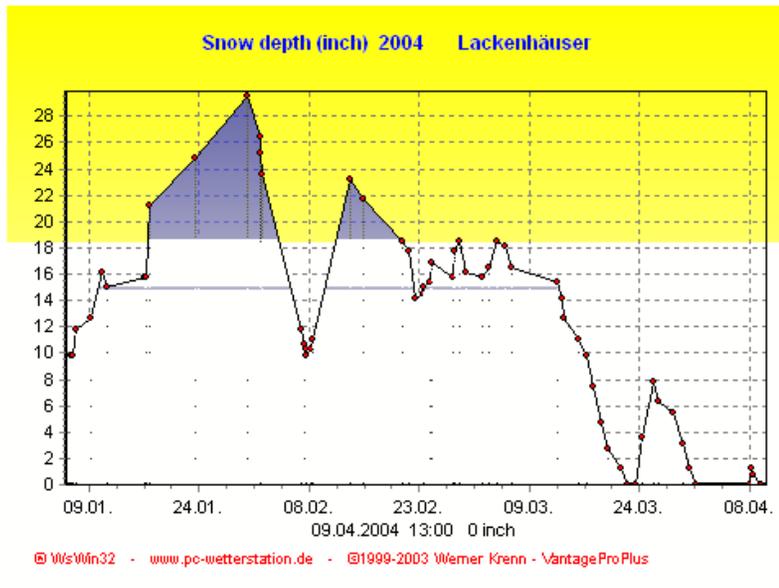


**Resetting to entire available season room:**

You position the mouse in the right graphics area, with pressed left mouse button you move the mouse to the left a little and leave the left mouse button then.

With **Background colour**, **xx Transp.**(arents) and **Gradient** you can match the graphics representation onto your needs.

If the saved graphics isn't ok. sees below, so please choose "GIF-Reduction" and/or deselect Gradient.



With pressing of this button, the snow depth graphic is stored as a **PDF-file**

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# Weather forecast

The weather forecast bases, among other things, on the air pressure changes of the last 24 hours.

With the indicated cloud low limit it is a question of the height with reference to the location altitude, that is for the absolute height the location altitude must be added !

The **Snow-line** is shown only in the winter time (Nov.-March=northern hemisphere and/or May-Sept=southern hemisphere) or when the snow line is about **300 m (985 ft)** away from the Location elevation.

If you are using a Weather station WMR-918, you can choose, whether the computed weather forecast or dier weather forecast, that these station sends, are supposed to be employed.

The option "show weather forecast" concerns both the Internet files (current.html) and the representation in the Min./Max bar at the air pressure.

When you at the "**black fields**" (under graphics) accrete, you can default own Forecast-ICONS. - here in the picture already all are "own" - except for "sunny"

If for a weather forecast event no own selection is available, here for example at "light cloudy", like this is with the "chosen" forecast (Charges / from weather station), this "event" isn't specified.

Example: at „**from weather station**“ "stormy" isn't available!

The actually selectable "ICON" are on the existing weather station dependent - here representation for VantagePro

**Weather forecast** (11:55 PM Saturday, March 20, 2004)

**Barometer** 29.75 inHg  
max. air pressure gradient (24h) 0.04 inHg/h  
max. Air pressure tendency 24h 0.01 inHg  
Air pressure tendency 1 hour -0.01 inHg  
Air pressure tendency 2 hours -0.03 inHg  
Air pressure tendency 3 hours -0.05 inHg  
Air pressure tendency 6 hours -0.09 inHg  
Air pressure tendency 12 hours -0.19 inHg  
Air pressure tendency 24 hours -0.20 inHg

**Air pressure tendency** falling

Cloud low limit ~ 1826 ft  
Visibility dark! - ~ 7-9 miles  
Snow-line ~ 5610 ft

**rainy Forecasting**

show weather forecast  
 computed  
 from weather station

Weather forecast (Weatherstation): [161]  
Mostly cloudy and cooler. Precipitation likely. Possible wind shift to the W, NW, or N. (rainy)

**Weather forecast** (Graphics)

? Graphics

sunny				X
light cloudy				
cloudy				X
rainy				X
unstable				X
snowfall				X
thundery				
stormy				
Rain+unstable				X
Sleet				X
Snow+unstable				X
Sleet+unstable				X

## Statistics dates

**Last Rain:** if you had to correct the rain quantity, you can put back the "last rain" here. You must let shown/scan the day after it where the last rain appeared.

**Last frost:** if your last frost ist wrong, here your are able to „reset“ it.

A frost ist only registered/shown again, if you scroll through the days and there a Outside temperature under 0°C/32°F occured.

**Last frost Year:** it becomes the last frost of the indicated year in the 1. semester of the year (northern hemisphere) presented - if there are no available data, it shows "---".

**1. frost year:** it shows the 1. Frost of the selected year in the 2. semester of the year (northern hemisphere).

For the current year, it therefore always becomes in the first half-year (January-June) with us in Europe, "---" is shown (until the first frost appears in the late autumn).

Weather forecast

Weather forecast | Statistics dates | Text | Graphics | Season\_Var

**last Precipitation**

21:56 31.01.2017 (1 Day, 21 hours, 23 minutes)

**last frost**

20:48 29.01.2017  
09:05 30.01.2017 (12 hours, 16 minutes)

last frost Year 30.01.2017 06:39 -3.0 °C (Minimum Day)  
1. frost Year ---

Day Month Year hour  
0 2 2 2010 19 20  
Sensor: Temperatur Außen  
minute

-5,0 °C 02.02.2010 19:20

## Text

This windows is for own forecast-text for the variable:

%forecast\_txt1%

%forecast\_txt2%

%forecast\_txt3%

Weather forecast

Weather forecast | Statistics dates | Text | Graphics | Season\_Var

insert text

1)  X

2)  X

3)  X

= %forecast\_bt1%, %forecast\_bt2%, %forecast\_bt3%

1  = %we\_own\_bt1%  
 = %we\_own\_bt2%

2  = %we\_own\_bt3%  
 = %we\_own\_bt4%

3  = %we\_own\_bt5%  
 = %we\_own\_bt6%

planned.

## Season\_var

Here, you have the possibility to investigate Season-data in the program directly and to store as variable. You unburden the system with it before the unnecessary working off such variables.

**You can pick up solid periods (month, year, spring, summers, autumn, winters, record-start) directly. With the selection "day" is used the set time period.**

You can store the arbitrated data with WriteVarXXX in the variable-data file **ws\_store.cfg** and with help of the variables **%varstore\_read [xxx]%** - XXX can be 1... 999 - on that occasionare. further-uses again. Which variable-number (1...999) you want to take, can you set here, preset is here 101 – 106 as well as 201

If you activate here „C“, the corresponding commentary-variable is filled with the variable name.

### Example:

VarREM9=season\_min[0~21122007~20032008]

Var9=-12,2 °C

Var101=25 Tage

VarREM101=^season\_frostgrowdays[01012009~07032009]^

Var201=30 Tage

VarREM201=^season\_icedays[01012009~07032009]^

	Day	Month	Year	Day	Month	Year	
avg	6.7	°C	101	101	<input type="checkbox"/>	C	
sum	30595.5	°C	102	102	<input type="checkbox"/>	C	
min	-18.9	°C	05:20	20.12.2009	103	103 <input type="checkbox"/>	C
max	32.3	°C	17:46	28.07.2013	104	104 <input type="checkbox"/>	C
minavg	-15.5	°C	20.12.2009		105	105 <input type="checkbox"/>	C
maxavg	26.1	°C	28.07.2013		106	106 <input type="checkbox"/>	C

## %varstore\_write...

Here you can read, change und rewrite variables in variable file.

With WriteVarXXX (XXX=1 ... 999) you can store the variable.

With the numeric selection-field (here 201), you can read the data from the variable-data file and if there are for it data deposited, they are represented and can possibly be altered then and new stored.

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# Wind direction

**Pay attention!** Gusts of wind stand only near the **weather station** available which set these dates available.

Here you can let represent the distribution of the wind direction in the announced representation period (during, day, week, month, year).

IF there are two **wind directions** are completely **identical** (same number at occurrences) the **low directions** have (**N-NE=22.5Degree, NE=45Degree ... N=360Degree**) **higher priority**.

The wind direction here represented as **"first"** wind direction (NE) is the so-called **"dominating wind direction"** - it is shown in case of representation of the average wind rate.

**Wind directions with a wind rate of <0,3 m/s (1,07 km/h) are not considered.**  
-> are performed as calm.

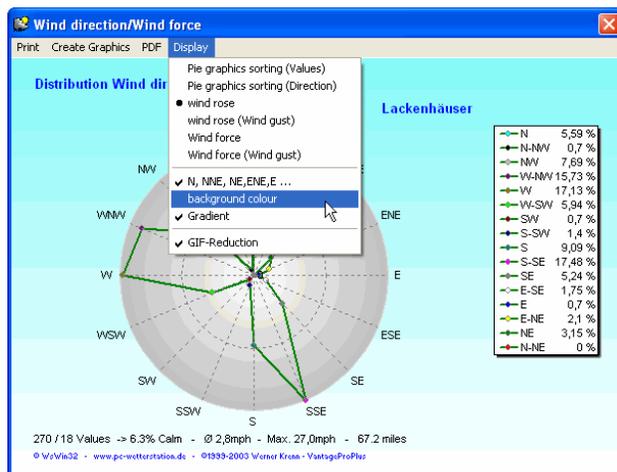
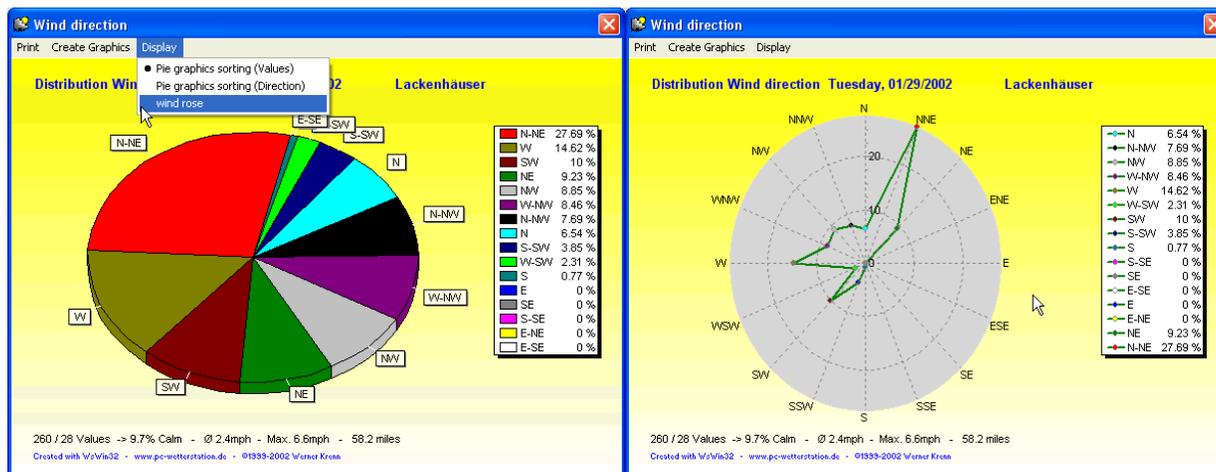
If there are not any dates (value =0), a DEMO-graphics is shown.

Under „Display“ you have the possibility to readjust the representation.

The calm Display is noticed and is preset then for all graphics-preparations (ddis\_current.gif and so on) (up to the change)

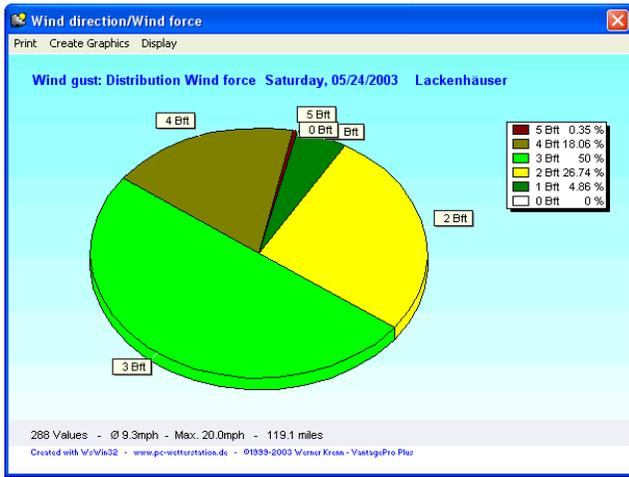
When you have activated the option „**calculate Windrun**“, this value (without back calc on 24 hours) with the values is also shown !

If you have entered and have activated for the minidisplay a **Head-** and/or. **Footer line**, so these inputs are expressed here also in the footer.

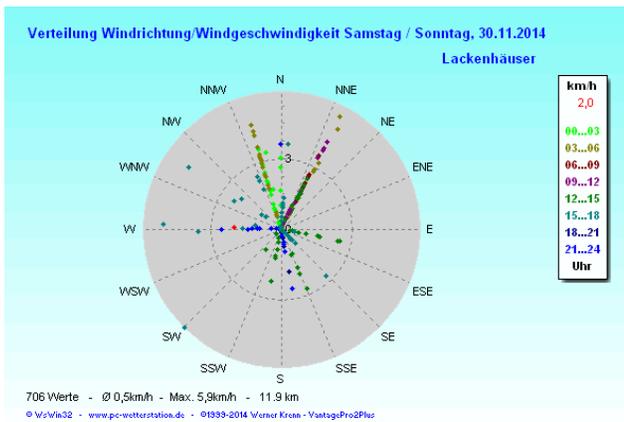


Windrose -> ddis\*.gif

The values for wind directions and calm show together 100 %.  
for example 436 / 303 values -> 41.0 % calm - 739 values = 100 %



Wind gust -> windbft\*.gif



Wind direction / Wind speed -> ddis\_f\_\*.gif

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# Statistic dates

Here you can look at your gathered statistics and let print your collected statistics too. The statistics is recalculated during the "year"-representation each time and/or for **current dates** the year-representation **must be chosen**.

## Consider !

The defaulted limit values for rain (>0mm [0in], >2mm [0.079in], >20mm [0.787in]) can be adapted to the own needs.

If you want to do **own changes**, you can **prevent the overwriting** of your changes with the option "read only".

The option "read only" is **ignored** for the **current year**.

**Read only activated is necessary, if you want to execute alterations!**

The statistics dates are stored in the file "ws\_hist.txt". With "A" you can jump to the current year.

The top screenshot shows the 'Statistics dates' window with the year set to 2000 and 'read only' checked. The table below displays monthly temperature statistics:

Year	Average Temp. °F	Temp. STDV	MinValue Temp. °F	MaxValue Temp. °F	MinValue Temp. °F	MaxValue Temp. °F	Ice days Tmax < 32°F	Cold days Tmin < 32°F	Cool days Tmax < 50°F	Summer days Tmax >= 77°F
2000										
January	26.06	-4.68	3.6	40.3	20.6	30.8	17	29	31	0
February	32.74	+0.20	16.2	49.8	28.2	37.6	4	23	29	0
March	35.85	-2.09	22.1	56.5	31.2	42.0	1	17	26	0
April	48.02	+7.02	25.3	76.1	39.7	58.4	0	6	7	0
May	57.43	+9.23	36.0	79.5	48.0	67.7	0	0	1	5
June	62.08	+7.04	38.8	87.3	51.1	72.6	0	0	0	13
July	56.93	-4.95	40.6	79.0	50.6	65.4	0	0	0	2
August	64.09	+0.77	49.1	87.1	55.9	73.8	0	0	0	10
September	55.33	-0.07	40.8	74.7	49.1	63.7	0	0	0	0
October	51.60	+1.60	37.2	76.1	45.9	57.8	0	0	4	0
November	41.47	+7.67	27.0	59.5	36.3	47.6	0	4	22	0
December	35.17	+10.37	10.9	55.0	29.8	41.1	5	22	27	0
Total	47.26	+1.76	3.6	87.3	40.6	54.9	27	101	147	30

The bottom screenshot shows the same window with a different table displayed, showing monthly precipitation and other weather statistics:

Year	Rain in	Rain STDV	Rain % STDV	days >0.000in	days >0.079in	days >0.787in	ET in	Wind Run miles/24	Sun hours	%
2000										
January	3.049	-1.360	69.2%	7	4	2	0.014	112.3	0:00	
February	3.227	-0.277	92.1%	12	5	1	0.167	151.5	0:00	
March	9.296	+6.955	380.9%	28	19	3	0.346	209.8	0:00	
April	2.443	-0.825	74.7%	10	9	0	2.447	336.2	0:00	
May	3.301	-1.502	68.7%	13	9	0	3.300	258.8	0:00	
June	0.770	-3.246	19.2%	9	5	0	3.652	282.8	0:00	
July	2.354	-2.764	46.0%	21	8	0	1.524	174.0	0:00	
August	3.405	-0.532	86.5%	13	7	1	3.039	282.0	0:00	
September	4.944	+1.165	130.8%	14	9	3	1.394	179.0	0:00	
October	4.722	+2.360	199.9%	17	12	1	1.148	164.9	0:00	
November	2.132	-2.160	49.7%	18	9	0	0.472	170.3	0:00	
December	2.640	-1.770	59.9%	15	6	1	0.270	173.5	0:00	
Total	42.282	-4.056	91.2%	177	102	12	17.772	2495.0	0:00	

## Alterations of the values at Temperature, Rain/ET/Wind /Sun:

- Changing is only possible if the year is "write-protected" (otherwise this modification would disappear in the case of view chose of this year again)
- where you can only put the "cursor", modifications are intended/possibly (for example not in the case of calculated/dependent values)
- at input of time values (sun time/rainy season) the colon ":" is replaced with a minus "-".
- the time value must always be indicated with 2 minute-numbers and at least a number of hours.
- The program recognizes the time value modification by the "Minus" (and only here)!
- you must activate the "request for modification" with the button "Edit", a far actuating of this "button" fuses the modifications **without automatic request**
- after a modification, it can be necessary that you must press the button „Edit“ twice so that the far "request for modification" becomes acting!

These data can you store into the “yearly-data file” with the button”Year-File”. For example for interpretation in long-time-graphics.

- even if no other weather-data are available!

## Data of a Year

Here all collected data of a selectable year are returned. If the data are not shown or are wrong, you don't use „Year-File“ and/or the corresponding yearly file is not current. You can update under [Update Graphics/Tables ...](#)

Meas. item	Minimum	Time	Date	Maximum	Time	Date	Average
Temperature Indoor	55.6 °F	06:25 AM	01/16/04	78.1 °F	05:50 PM	08/08/04	66.74 °F
Temperature Outdoor	2.5 °F	07:10 AM	01/23/04	81.7 °F	03:40 PM	08/12/04	43.26 °F
ØMinValue Temp.							36.90 °F
ØMaxValue Temp.							50.32 °F
Cold days Tmin	< 32°F						134 days
Ice days Tmax				< 32°F			65 days
Cool days Tmax				< 50°F			173 days
Summer days Tmax				>= 77°F			11 days
Hot days Tmax				>= 86°F			0 days
Warm Days Tmax				>= 64.5°F			84 days
Very Cold Tmin	<= 14.0°F						16 days
last frost	29.1 °F	03:55 AM	05/24/04				
1. frost	31.6 °F	11:55 PM	10/11/04				
Heat degree days							7830.6
Cool degree days							93.3
Growing degree days							2680.8
X-Heat degree days							8245.0
Temperature Outdoor min.	2.5 °F	07:10 AM	01/23/04	81.3 °F	03:25 PM	08/12/04	43.14 °F
Temperature Outdoor max.	2.8 °F	06:20 AM	01/23/04	81.9 °F	04:20 PM	08/12/04	43.38 °F
Temperature Soil (+10cm)	14.0 °F	10:00 PM	03/01/04	100.9 °F	04:10 PM	07/08/04	46.34 °F
Precipitation detection	75.0 °F	12:35 PM	08/16/04	163.9 °F	12:00 PM	01/01/04	146.86 °F
Soil Temperature (+10cm) Su	30.9 °F	02:20 AM	12/21/04	73.9 °F	03:05 PM	08/12/04	46.57 °F
Soil Temperature (-10cm)	33.1 °F	01:15 AM	01/13/04	68.0 °F	09:45 PM	08/12/04	47.18 °F
Soil Temperature (-30cm)	34.0 °F	01:55 AM	01/13/04	66.0 °F	08:30 AM	08/12/04	47.93 °F
Soil Temperature (-60cm)	--			--			--
Humidity Indoor	24 %	08:45 AM	03/06/04	64 %	03:35 PM	07/24/04	44 %
Humidity Outdoor	11 %	12:15 PM	12/09/04	100 %	11:05 PM	11/17/04	82 %
Leaf Wetness 1	0 If	12:05 AM	01/01/04	15 If	10:40 AM	01/07/04	3 If

## Statistics dates related to month basis

the consideration-period becomes from the settings under Internet, Start Page and here the options:

**Period for Start page from / to** (here 1999-2003)

taken.

With the button „Store“ this Tabelle is saved in the file „[monthlongtime.gif](#)“.

This button is available only when the whole table is visible!

This table can be printed out in the displayed form (near color printer colored).

	Temp.	min.	Temp.	Ø min.	Temp.	Ø max.	Temp.	max.	Rain	min.	Rain	max.	Sun	min.	Sun	max.
1999 - 2003	Year	°F	Year	°F	Year	°F	Year	°F	Year	in	Year	in	Year	hours	Year	hours
January	2000	3.6	2000	26.06	2001	30.52	2002	47.5	2001	0.962	2003	4.660	2003	48:20	2003	48:20
February	1999	2.7	1999	24.98	2002	35.56	2002	55.2	2003	1.570	2002	7.878	2003	164:00	2003	164:00
March	2001	20.1	2000	35.85	2001	38.14	2002	61.2	2003	0.800	2001	11.028	2003	201:30	2003	201:30
April	2003	17.1	2001	41.25	2000	48.02	2000	76.1	2003	1.140	2001	4.056	2003	223:00	2003	223:00
May	2003	33.1	1999	54.28	2001	57.52	2003	83.7	2001	2.383	1999	16.787	2002	19:00	2003	235:20
June	1999	37.8	2001	55.15	2003	64.22	2000	87.3	2000	0.770	2001	6.365	2002	264:15	2003	274:00
July	2000	40.6	2000	56.93	1999	63.14	2001	88.2	2000	2.354	1999	6.661	2003	215:30	2002	218:12
August	2003	43.9	1999	60.73	2003	66.18	2003	89.4	2001	2.709	2002	13.071	2002	183:30	2003	259:31
September	2002	33.3	2001	50.16	1999	59.77	2003	78.8	2003	1.060	2001	9.074	2001	30:45	2003	221:45
October	2003	18.7	2003	38.57	2001	52.77	2000	76.1	2001	1.540	2002	6.681	2002	93:20	2001	159:04
November	2002	-0.0	2001	31.86	2000	41.47	2002	66.4	2003	0.770	2001	3.906	2002	52:25	2003	96:20
December	2001	0.9	2001	24.13	2000	35.17	2001	61.0	1999	1.406	2001	4.592	2003	65:50	2002	75:00

## Computed Long time values:

The program computes the average long-term values from your dates for the temperature and rain number and compares it with your dates which your input among „Long time values“.

You can save this table as graphics „longtimecalculated.gif“, in which you would extend a double-click with the mouse in the table area.

STDV = Standard Derivation

This table can be printed out in the displayed form (near color printer colored).

Statistics dates

Ok + Close Help

Temperature Rain/ET/Wind/Sun Year Month Long time values **computed** Parameters Graphics (672x361)

Print **1999 - 2005**

	Average	Temp.	Rain	Rain	Sun	Sun
1999 - 2005	Temp. °F	STDV K	in	STDV in	hours	STDV h
January	27.44	-3.30	3.831	-0.578	56:58	+0:58
February	30.17	-2.37	3.448	-0.056	107:55	+9:55
March	36.26	-1.68	5.757	+3.316	177:54	+18:39
April	43.66	+2.66	2.623	-0.645	210:58	+0:58
May	54.81	+6.61	5.071	+0.268	142:23	-37:37
June	59.18	+4.14	3.918	-0.098	237:53	-36:07
July	60.71	-1.17	3.861	-1.256	208:19	-7:11
August	62.92	-0.40	4.876	+0.939	214:42	-44:49
September	53.87	-1.53	4.275	+0.495	149:48	-0:57
October	46.47	-3.53	3.870	+1.508	127:29	+12:59
November	36.25	+2.45	2.806	-1.485	72:06	+0:06
December	29.78	+4.98	2.893	-1.516	82:36	+0:36
Year	44.88	-0.62	47.134	+0.795	1708:29	-163:02

## Long time values

If you liked to manage also the long time values with this program, you have the possibility for this purpose so here. An additional temperature sensor (for example for soil temperature) you can choose under "Parameters".

All these values become as "customised Variable" set up for your own use !

### Automatically change longtime values

If you choose this option, the dates are taken over by the program - with the options „Recording begin ...“ you can limit the valid time range (for example if before this date there are not any correct dates).

If you want to **reset a value**, you enter for the value "00.0" - that is, to fill all possible places with **nought**. During the incorporation of the dates a plausibility is built-in (in order to prevent that measured value outliers are taken over).

Maximale changes for automatic incorporation:

Temperature	<15 °C	(59°F)
Air pressure	<15 hPa	(0.4429inHg)
Wind/Wind gust	<30 km/h	(19.685 mph)
Rain/day	<150 mm	(5.906in)
Rain/hour	<30 mm	(1.181in)

The rain dates can be taken over automatically in a system-dependent way only during the "recording mode".

**Without this option you must follow up the dates by hand !**

**The changes here, become first effective if you close this window with "OK".**

For the clock tracking of these values the year view must be chosen as a rule for available dates uniquely.

When you show with the mouse upon a value the last stored value is announced to you besides (provided that one available - else the already represented value is repeated)

The screenshot shows a window titled "Statistics dates" with a menu bar (Ok + Close, Store Statistics dates, Help) and a tabbed interface. The "Long time values" tab is active, displaying a table of statistics and recording options.

	MaxValue	Date	Time	MinValue	Date	Time
Temperature	89.4 °F	13.08.2003	15:10	0.9 °F	23.01.2006	07:10
Leaf Temp 1	111.0 °F	20.07.2007	16:28	6.1 °F	04.02.2006	06:38
Barometer	30.92 inHg	17.02.2008	00:16	28.91 inHg	05.03.2009	16:00
Wind	29.0 mph	09.12.2002	16:30	max. Air pressure tendency		
Wind gust	54.0 mph	24.09.2002	15:00	1.29 inHg	12.03.2006	24h
Rain/Day	12.110 in	28.05.2002		0.78 inHg	21.02.2002	Day
Rain/h	1.709 in	26.05.2006	00:00	0.23 inHg	29.05.2002	hour
Solar	1361 W/m²	31.05.2007	13:15	Duration Dryness		
UV-Index	11.2 UV-I	08.07.2007	13:12	from	08.10.2006	08:20
<input checked="" type="checkbox"/> Automatically change longtime values		Recording begin ...		19 days, 10 hours, 50 minutes		
		01.11.2001		to	27.10.2006	19:10
		21.03.2009		Duration frost		
				from	04.02.2003	11:53
				to	19.02.2003	23:48
				15 days, 11 hours, 54 minutes		

You can switch the display between Long time and Current year data.

If you have selected "current year" and have chosen to create the Long time value graph, When generating the history graphics, in addition to the longtime.gif, a longtimeyear2018.gif (for this year) is also generated.

## Attention!

Changes made here in the year presentations (here year 2018) are not considered or adopted.

For a valid value in Rain/h all days have to be scrolled through since the beginning of the year in daily presentation! The data for this comes from the year-file, with changes to be accepted, the year-file has to be updated!

The screenshot shows the 'Statistics dates' window with the following data:

Parameter	MaxValue	Unit	Date	Time	MinValue	Unit	Date	Time
Temperature	57.7	*F	11.03.2018	10:18	2.7	*F	26.02.2018	04:25
Temp. +5cm	69.1	*F	11.03.2018	15:08	1.9	*F	26.02.2018	01:50
Barometer	30.55	inHg	27.01.2018	22:16	29.20	inHg	06.03.2018	12:45
Wind	27.0	mph	17.03.2018	19:32	max. Air pressure tendency			
Wind gust	41.0	mph	01.03.2018	04:00	0.61	inHg	31.01.2018	24h
Rain/Day	1.756	in	05.01.2018		0.61	inHg	31.01.2018	Day
Rain/h	0.079	in	04.01.2018	23:56	0.10	inHg	03.01.2018	hour
Solar	885	W/m <sup>2</sup>	18.03.2018	13:08	Duration Dryness			
UV-Index	2.5	UV-I	22.03.2018	12:10	from	24.02.2018	22:34	
<input checked="" type="checkbox"/> Automatically change longtime values			Reset		6 days, 2 hours, 42 minutes			
Recording begin ...			01.11.2001		to	03.03.2018	01:16	
<input type="radio"/> Long time values			23.03.2018		Duration frost			
<input checked="" type="radio"/> Year 2018					from	21.02.2018	12:40	
					10 days, 6 minutes			
					to	03.03.2018	12:46	

## Parameters

Under **Parameters** the **long-standing mean temperature values** are to be entered. These values are needed for the representation of the month-/year average-temperature line in the diagram and for the calculation of the standard deviation of temperature.

In the same way the long-standing values of the rain amount per month and year sum and for sun time.

**The default settings for the rainy days are: >0 mm; >2 mm; >20 mm**

Who would like to change these settings, can do this directly about the change of the WsWin.cfg:

Section:

**[Rain]**

Rain02=0.000 -> Value **0** -> allowed values 0 - 5 inch: **0.000** -> 0.000-0.197 in

Rain2=2.00 -> Value **2** -> allowed values 1 - 20 inch: **0.087** -> 0.393-0.787 in

Rain20=20.000 -> Value **20** -> allowed values 5 - 100 inch: **0.787** -> 0.197-3.937 in

The values must be defaulted **always in "mm"**.

After a change and available History-Data the year representation to the calculation of the new values must be selected again - to interrupt before **"read-only"** (provided that turned on)

The **Rain02**-value is employed also for the calculation of the rainy days with the variables

`%raindaysmonth[x]%`

`%raindaysmonthly[x]%`

In the same way you can define your own limit values here for cold- and/or heat-days.

In addition the choice of a further long-time temperature sensor is possible here - mostly a soil temperature sensor.

Here must / you can activate the calculation for

**Calculate Wind Run**

**Calculate Evapotranspiration (ET)**

**The changes here, become first effective, if you close this window with "OK".**

**For the calculation of the here changed values the year view must be chosen as a rule for available dates again.**

The screenshot shows the 'Statistics dates' window with the following data:

Month	Temperature (°F)	Rain (in)	Sun (h)
Januar	30.74	4.409	56:00
Februar	32.54	3.504	98:00
März	37.94	2.441	159:15
April	41.00	3.268	210:00
Mai	48.20	4.803	180:00
Juni	55.04	4.016	274:00
Juli	61.88	5.118	215:30
August	63.32	3.937	259:31
September	55.40	3.780	150:45
Oktober	50.00	2.362	114:30
November	33.80	4.291	72:00
Dezember	24.80	4.409	82:00
<b>Year</b>	<b>45.50</b>	<b>46.339</b>	<b>1871:31</b>

Customized cold value: Sensor: Temperature Outdoor, description: Sehr Kalt, Limit value: <= 14.0 °F

Customized warm value: Sensor: Temperature Outdoor, description: Warme Tage, Limit value: >= 64.4 °F

2.Sensor - Long time values: Temperature Leaf Sens 1

Calculate Wind Run  
 Calculate Evapotranspiration

STDV: eigene Daten 1999-2006

Statistics dates

Ok + Close Store Statistics dates Export Altern. Grafik drucken Help

Year 2013 A

Temperature Rain/ET/Wind/Sun Year Month Long time values computed Parameters Graphics (689x365) Extra Graphics2

Extra #3  
 Temperature Outdoor  
 description Kalt (Tage)  
 Limit value  <= 23.0 °F  >=  
 Min  Avg  Max

Extra #4  
 Temperature Outdoor  
 description Warm (Tage)  
 Limit value  <= 59.0 °F  >=  
 Min  Avg  Max

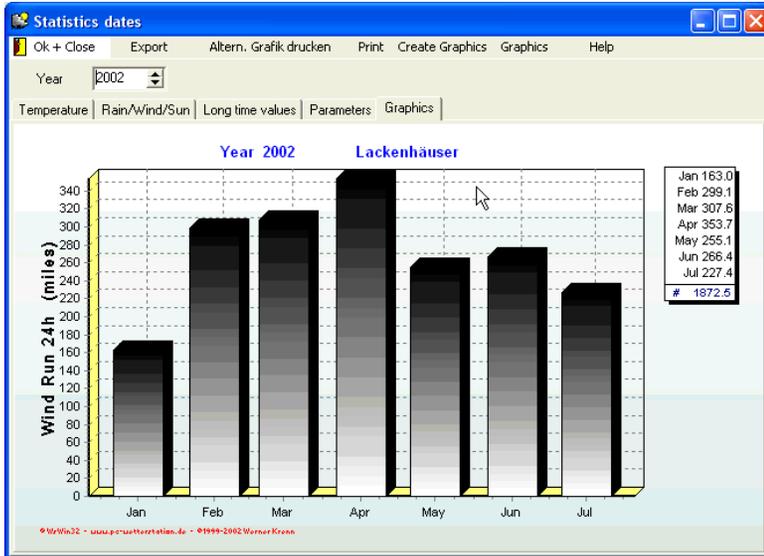
Extra #5  
 Wind gust  
 description Wind >=5 Bft  
 Limit value  <= 38.8 mph  >=  
 Min  Avg  Max

2013	Kalt (Tage)	Warm (Tage)	Wind >=5 Bft
2013	Min<=	Avg>=	Max>=
	23.0°F	59.0°F	38.8mph
January	16	0	2
February	16	0	7
March	10	0	1
April			
May			
June			
July			
August			
September			
October			
November			
December			
<b>Total</b>	<b>42</b>	<b>0</b>	<b>10</b>

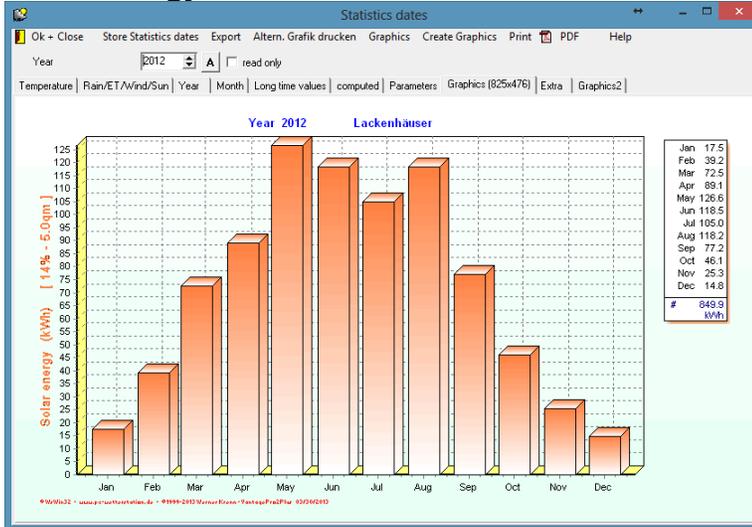
www.pc-wetterstation.de

# Graphics

## Wind Run



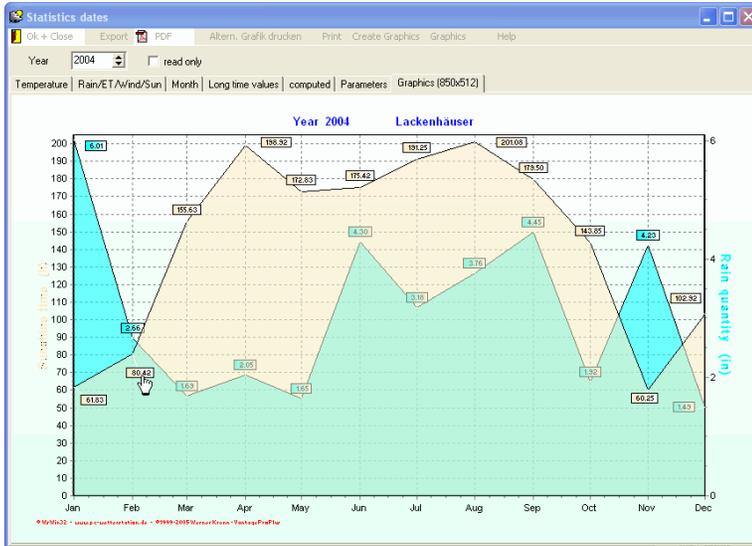
## Solar Energy



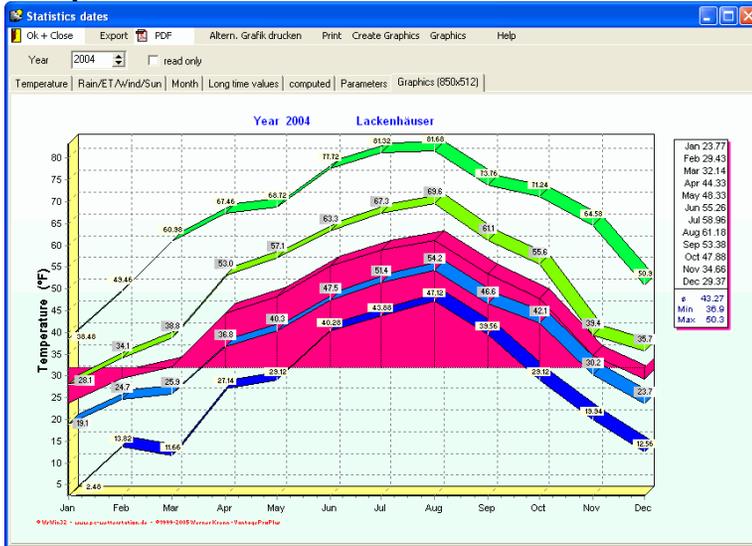
## Clima diagram



## Rain/Sun



## Temperature



### Annotations to the graphics:

The represented background-color is always like the background color of the main-diagram.  
Exception:

- The maximal characteristic is always **GREEN**
- The minimal characteristic is always **BLUE**

The shown values of Wind run refer always to **24 hours** - other programs (for example Weatherlink from DAVIS) show the direct values.

You can realize the direct values in which you **multiply the announced value by 24**.

At the History-Grafik you have to strobe the possibility also the mean values of the Minimal and Maximal-values (as in the represented graphics). The information in the legend under the months are those ones

### Average values of the year for

- Temperature value
- Temperature minimum value
- Temperature-maximum value

**The automatic storage of these graphics is not planned.**

The graphics have fixed names:

**Wind Run**                      **wind\_y?????.gif**

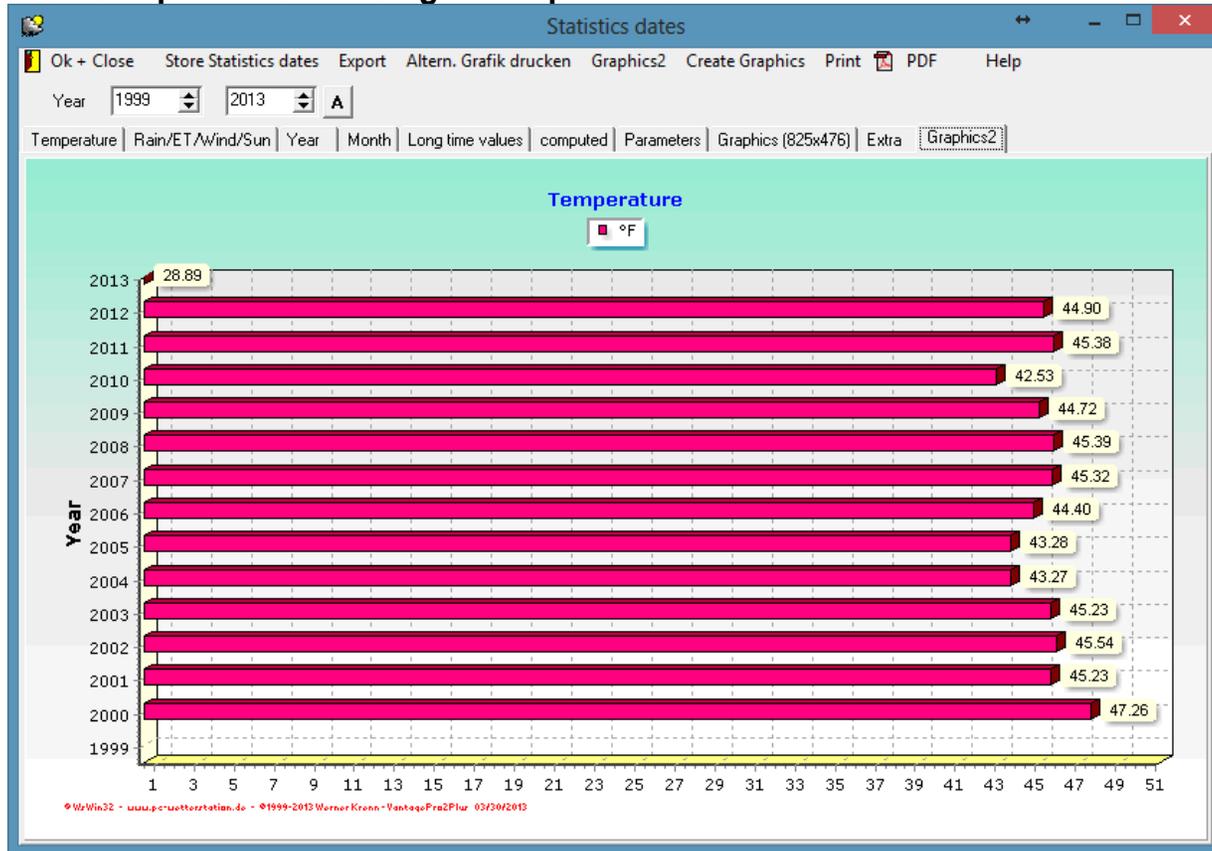
**Sollarenergy**            **solarenergy\_y?????.gif**  
**Temperature**        **his\_y?????.gif**  
**Rain/Sun**            **rainsun\_y?????.gif**  
**Climadiagram**      **clima\_y?????.gif**  
**Longtime Climadiagram**    **clima\_y.gif**

For ???? is the year number to be used (2000,2001 ...)

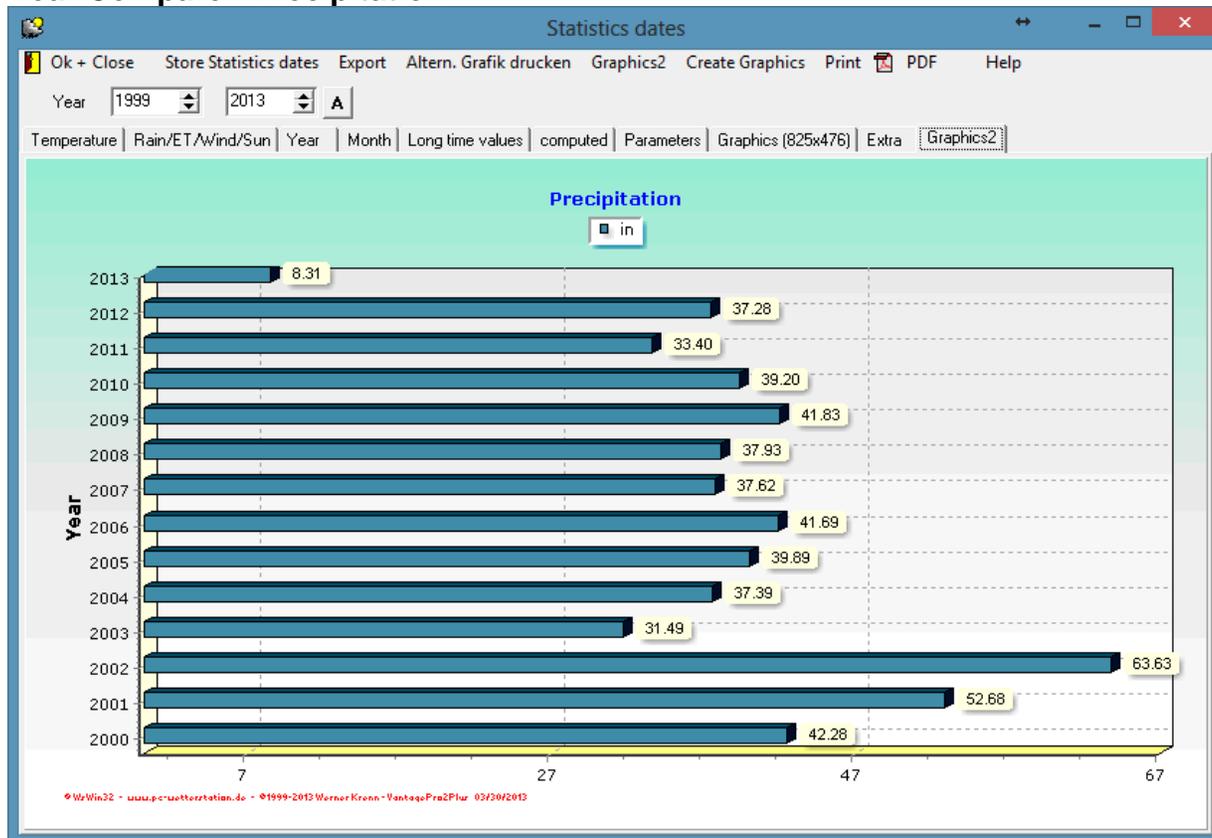
The solar energy-graphics stands only at weather-station VantageProPlus and available solar-sensor to the disposal!

# Longtime graphics (Graphic2)

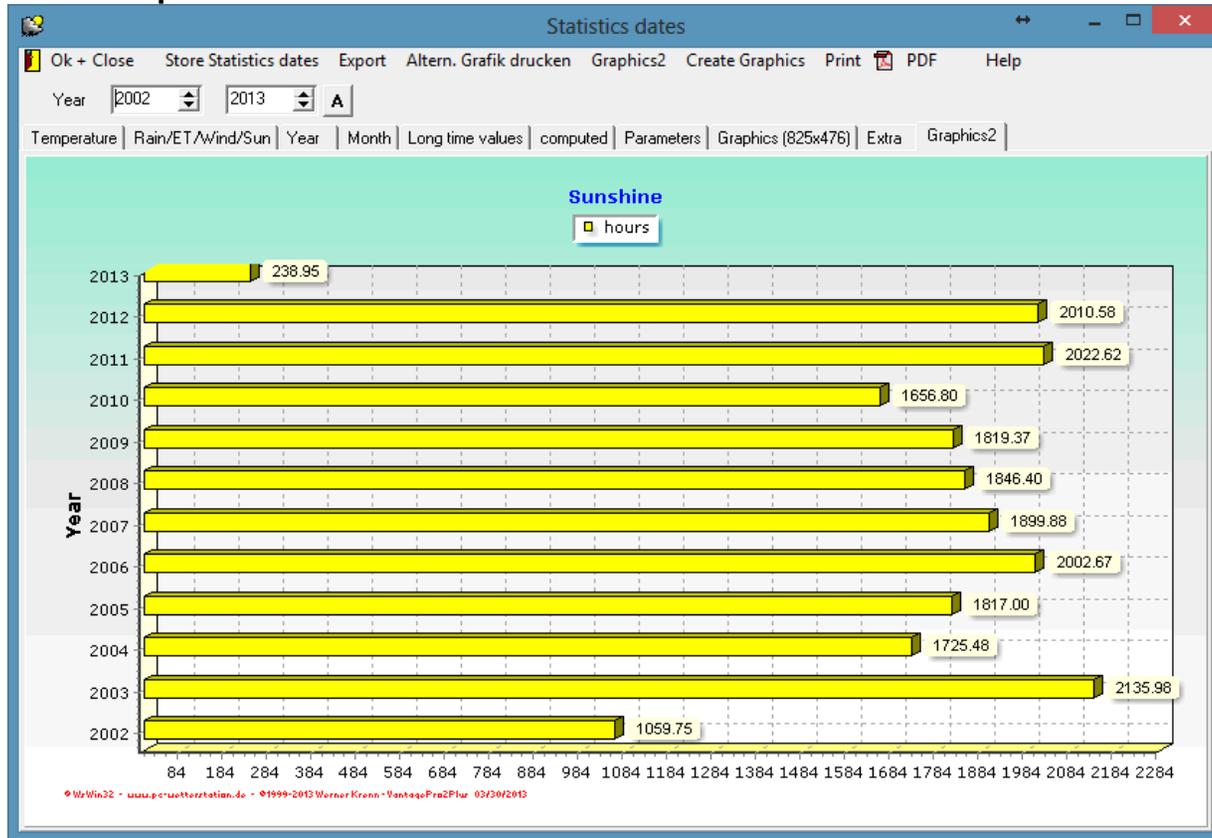
## Year Compare - Year Averages Temperature



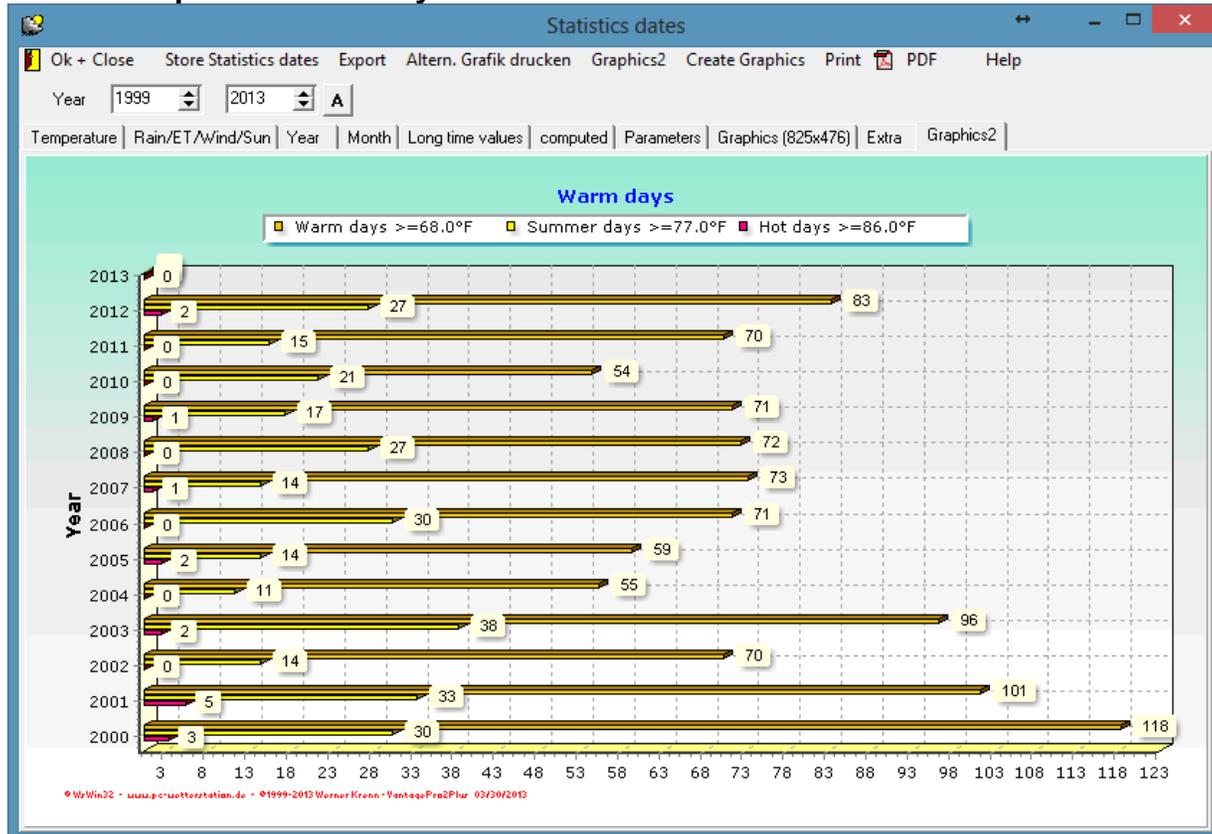
## Year Compare - Precipitation



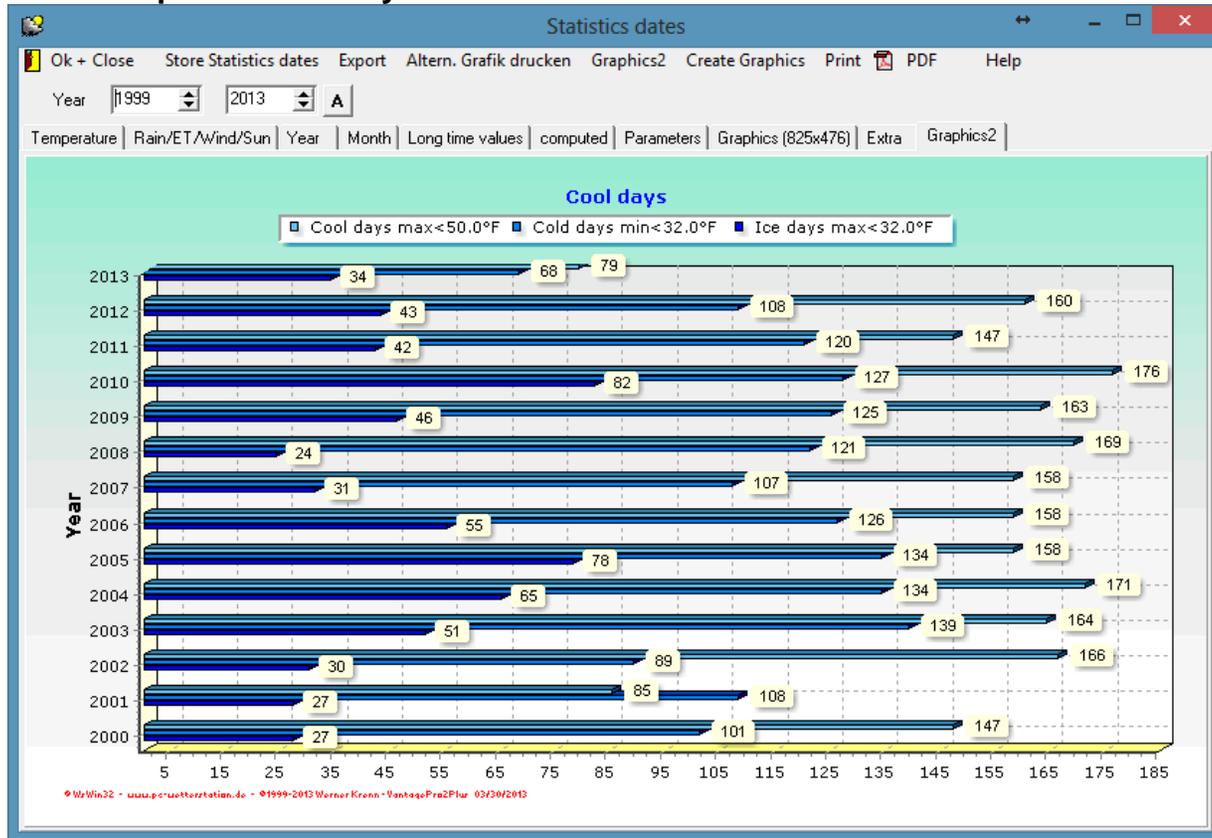
## Year Compare – Sunshine Time



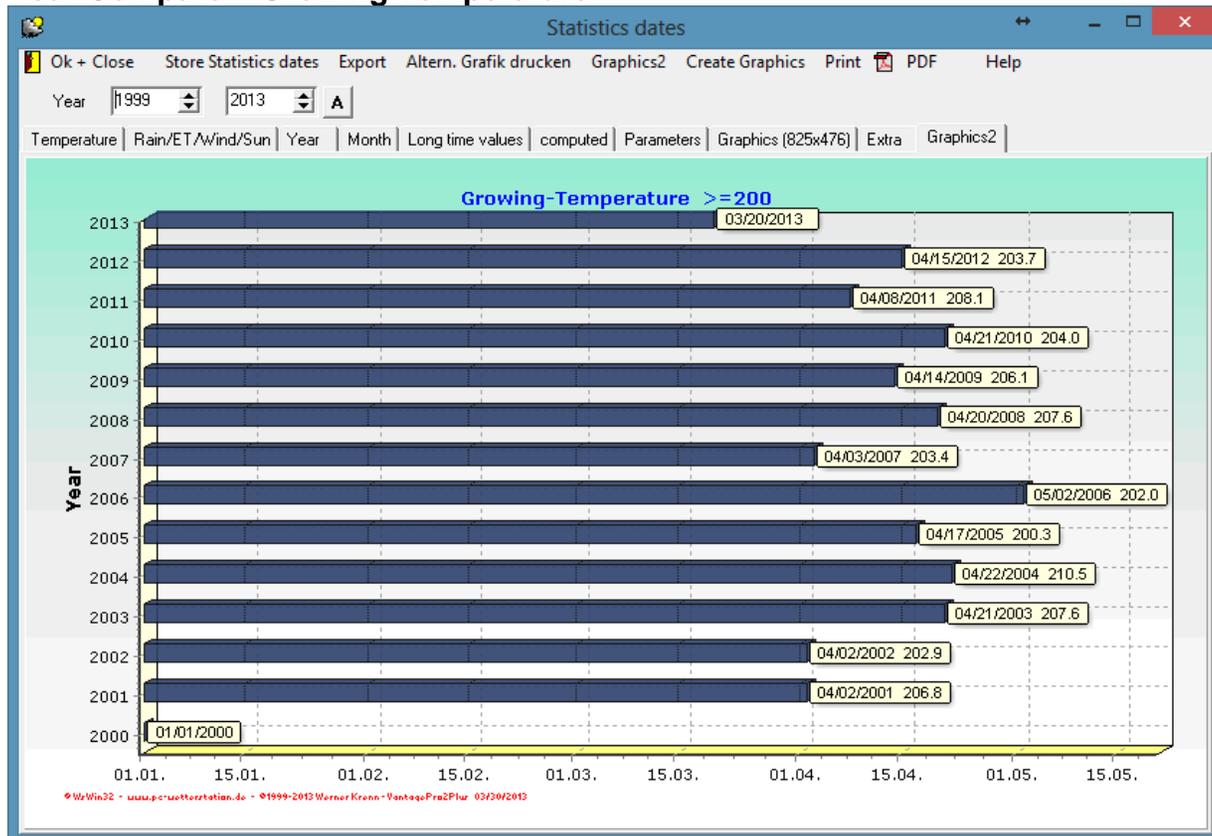
## Year Compare – Warm Days



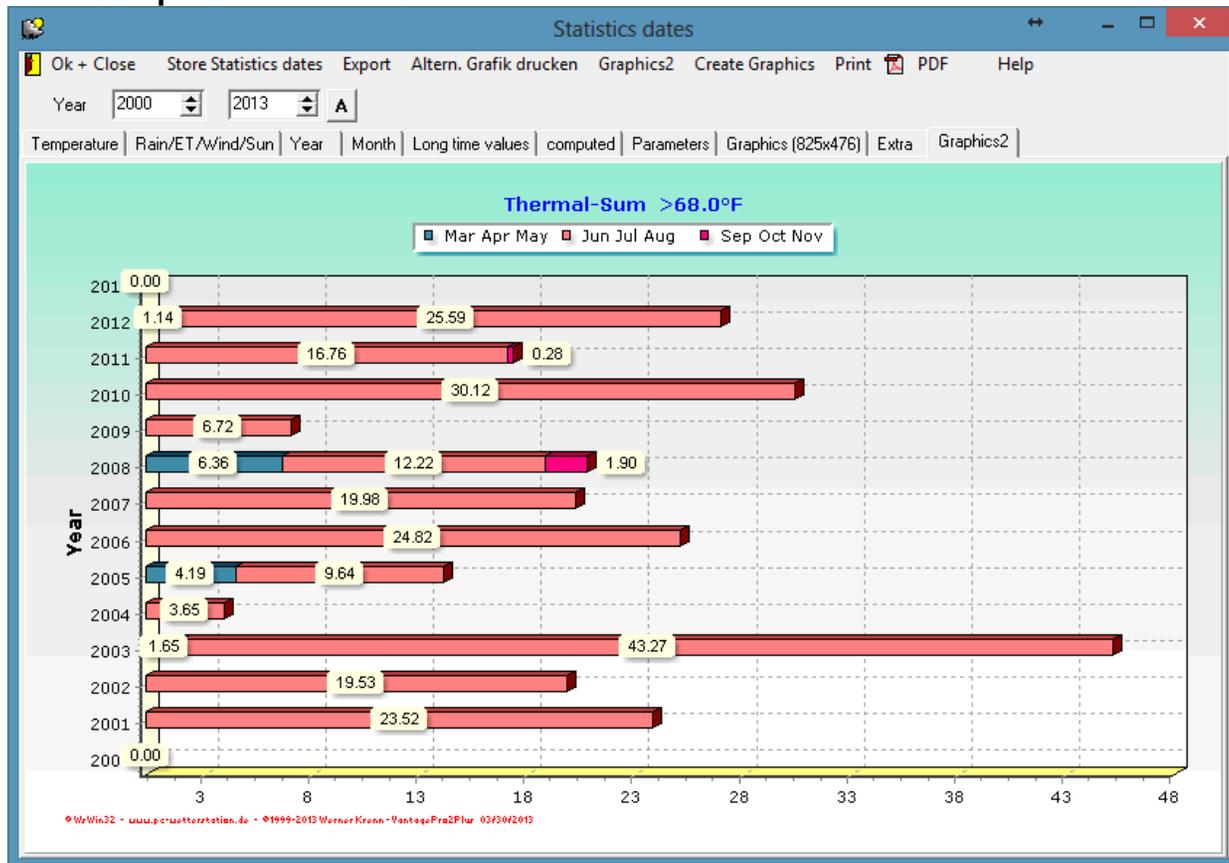
## Year Compare - Cool Days



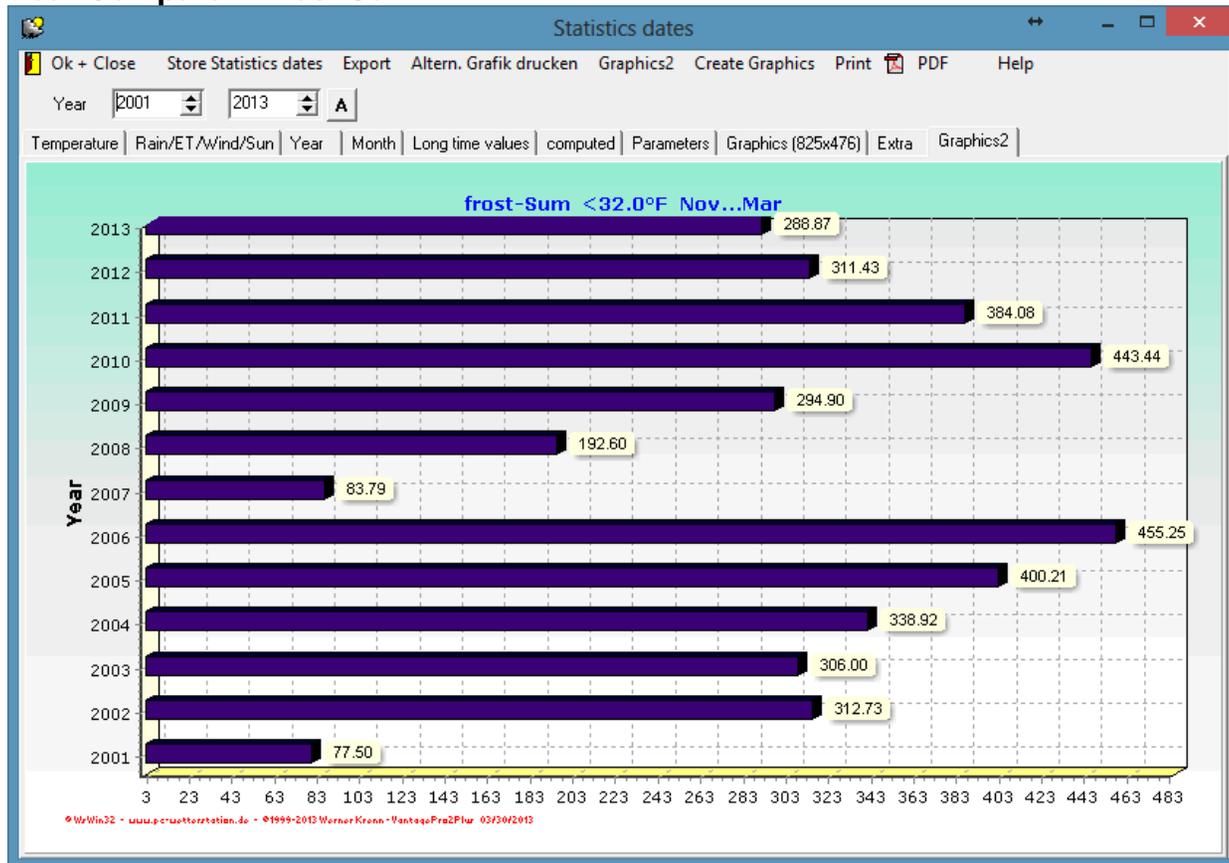
## Year Compare - Growing Temperature



## Year Compare – Thermal Sum



## Year Compare – Frost Sum



For the long-time-graphics (Graphics2), one can choose for which yearly-area the statement should take place. With what the program ignores the start-years here, if **no data (= yearly-data file)** are available for it, with the exception for yearly-average-temperature-comparison. here the chosen area is always represented!

Who would like for the Temperature and the current year also see a bar line (normally shows only a value) can this turn on or turn off with a double-click with the mouse in the graphics, if the temperature-indication is represented.

These graphics are linked into the weather-date main menu if they are found in the "HTML"-folder.

If values are hidden in the graphics, you can displace the "values" with the **mouse (Hand symbol)** into another position. (for example before the storage of the graphics).

If the "values" "stick" after that, choose another year shortly and to go back after that to the actual year.

... if you have problems with these graphics, you should control your available system resources.

With **Gradient** and **GIF-Reduction** you can affect a errored graphics generation.

**Important!**

**If these graphics are not generated or the generation is canceled, you must deselect GIF-Reduction!**

Functions

Contents

# Degree days

Here you can view your degree days and/or print your degree days. You find the properties for the degree days under „Special sensors“

## Consider!

These values are computed only in the "year"-representation and posted too. At no more current dates, to choose the year display uniquely.

The screenshot shows the 'Degree Days' window with the 'Values' tab selected. The year is set to 2012. The table below displays the following data:

03/30/2013	Heating 64.4°F	Cooling 64.4°F	Growing 41.0°F	X-Heating 53.6°F	Growing- Temp. °C	frost-Sum <32°F	Thermal-Sum >68.0°F
January	1123.1	0.0	0.0	1234.7	4.0	74.0	0.0
February	1279.6	0.0	0.0	1384.0	5.2	195.9	0.0
March	778.5	0.0	51.9	890.0	128.6	3.1	0.0
April	618.5	8.7	152.6	696.9	203.8		2.1
May	293.7	5.2	442.5	216.5	397.7		0.0
June	196.0	47.1	553.1	157.6			19.6
July	135.5	40.1	630.0	93.8			10.5
August	96.6	48.9	677.7	30.3			15.9
September	298.7	0.6	403.9	294.0			0.0
October	630.1	0.0	147.3	718.3			0.0
November	768.3	0.0	28.5	876.3	203.7	7.9 (2011)	0.0
December	1068.0	0.0	0.0	1179.6	04/15/2012	30.5 (2011)	0.0
Total	7286.5	150.7	3087.6	7772.0	739.4	311.4	46.1

The screenshot shows the 'Parameters' tab of the 'Degree Days' window. The settings are as follows:

- Sensor Heat degree days: Temperature Outdoor, 64.4 °F
- Sensor Cool degree days: Temperature Outdoor, 64.4 °F
- Sensor Growing degree days: Temperature Outdoor, 41.0 °F
- Sensor X-Heat degree days: 68.0 °F, Temperature Outdoor, 53.6 °F
- Sensor Growing-Temperature / frost-Sum / Thermal-Sum: Temperature Outdoor
- Thermal-Sum Temperature: 68.0 °F

## Heat degree days

Calculation: If the temperature mean value of the day lies **under the adjustable base value (18°C/64.4°F)**, the difference of the current mean value to the base value to the heating-degree days is added.

-> American calculation of the **heating-degree days**.

### Cool degree days

Calculation: If the temperature mean value of the day lies **over the adjustable base value (18°C/64.4°F)**, the difference of the current mean value to the base value to the **cooling degree days** is added.

### Growing degree days

Calculation: If the temperature mean value of the day lies **over the adjustable base value (5°C/41°F)**, the difference of the current mean value to the base value to the **growing degree days** is added.

### X-Heat degree days

Calculation: If the temperature mean value of the day lies **under the adjustable base value (12°C/53.6°F)** the difference of the current mean value to the **cut value (20°C/68°F)** to the **degree days** is added.

-> European calculation of the heating-degree days.

### Growing-Temperature

Calculation: Beginning from January the positive day-average and a corresponding factor (January 0.5 - February 0.75 – from March on 1) are added until 200 is reached.

In the field November the reached sum is reported and in the field December the corresponding date. In the southern Hemisphere, the calculation-start is July.

### Frost-Sum

Calculation: Beginning in the month November until March (southern Hemisphere May until September) all Temperature values lower 0°C are added.

### Thermal-Sum

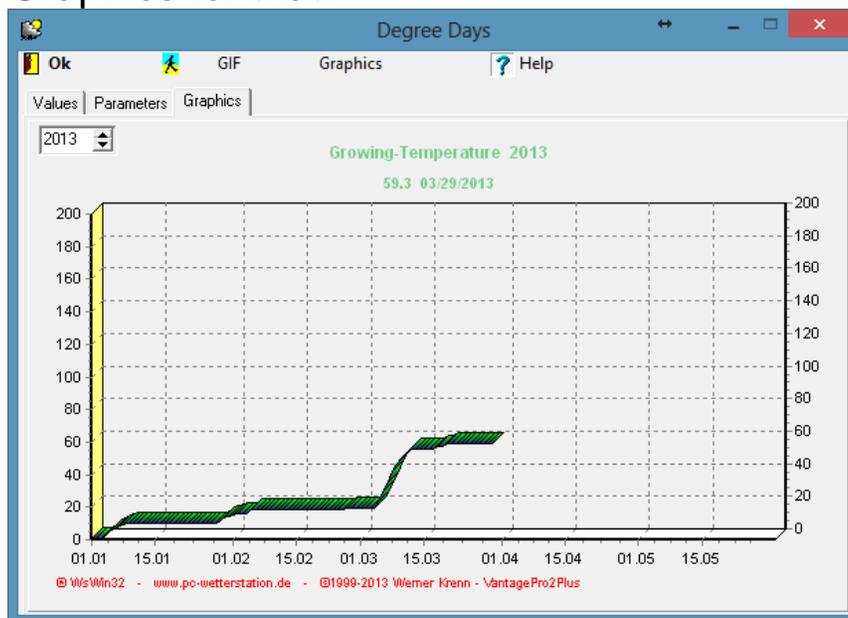
Calculation: June, July, August (southern Hemisphere December, January, February), the day-average-temperature-values greater 20°C (adjustable) are added up.

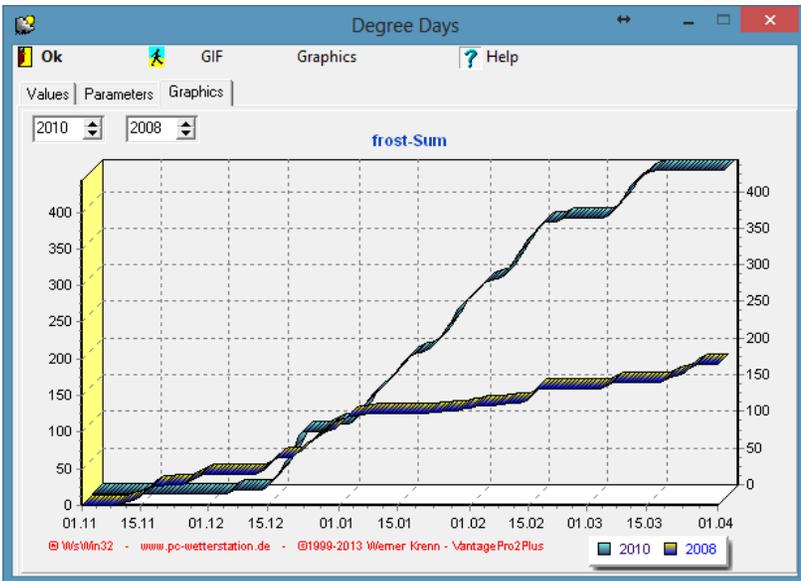
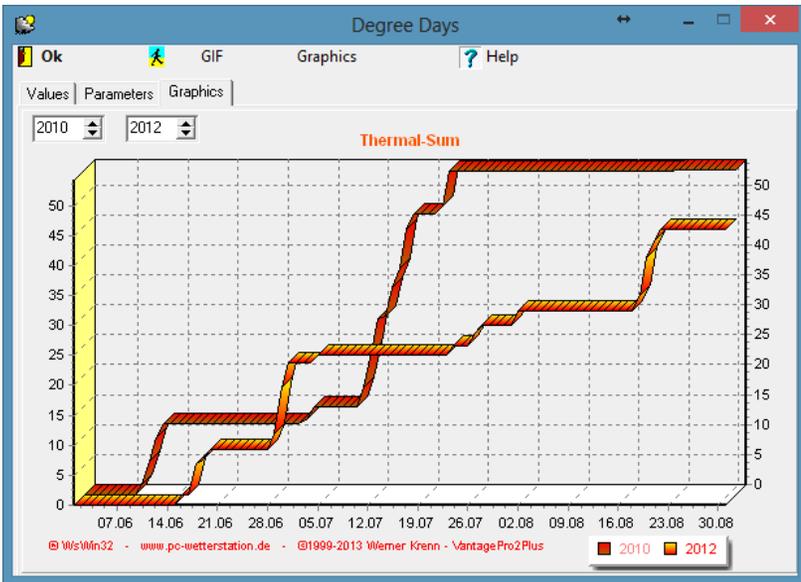
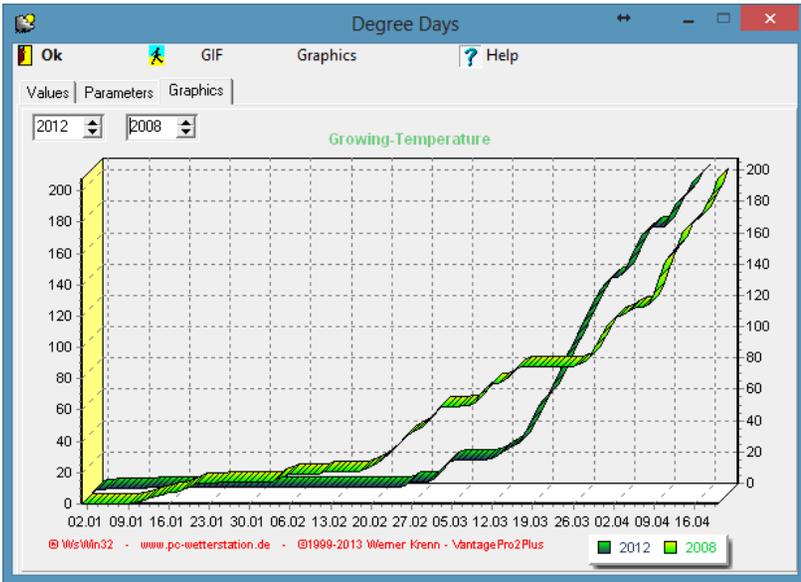
### Consider!

As default, the calculation of these dates (Degree days) is eliminated (no calculation).

If you want to let compute dates for that, you must choose a purchase sensor for that (usually the outside sensor).

## Graphics for that:





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# Sun/Moon

With the call the display show the data from the intern clock as a default and online.

With the option "Fast mode" the displaying is per second increased to 1 hour.

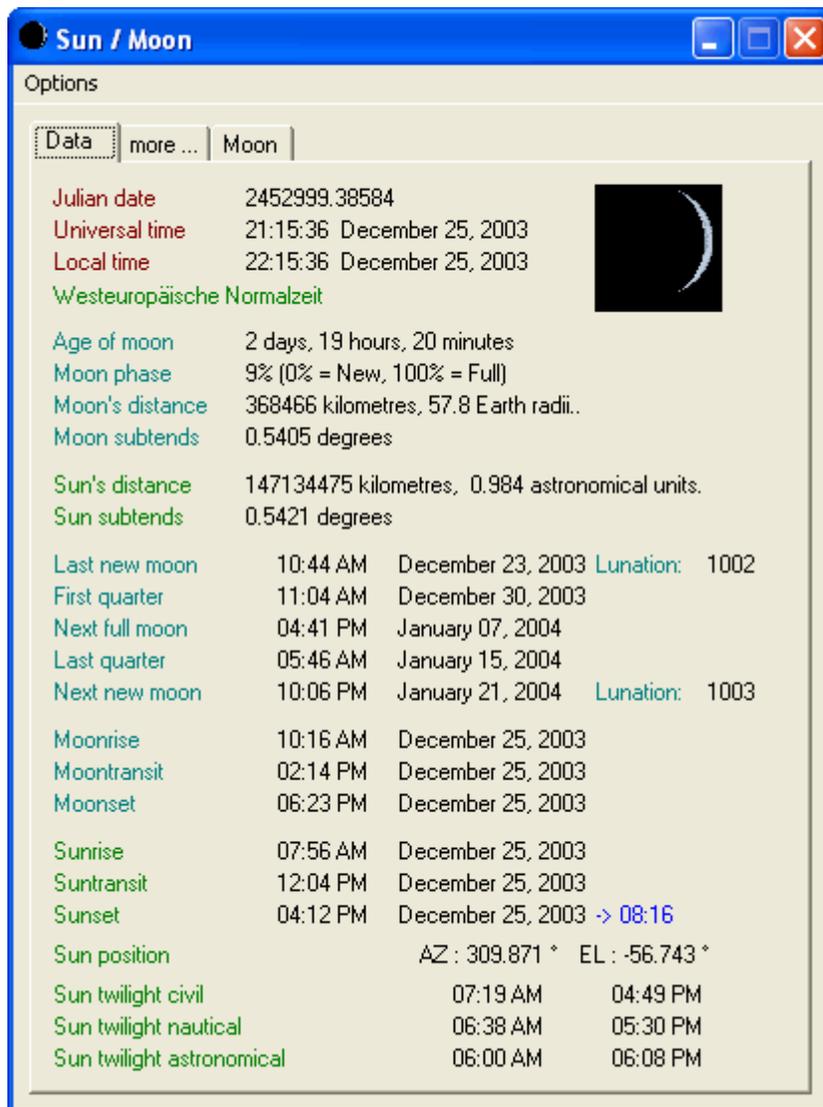
With "Stop" the continued execution of the clock is stopped.

With "Date weather station" also the continued execution of the clock is stopped and set on the time dates of the last stored weather data record.

With "Date selection" you have the possibility to represent for arbitrary time/date the moon and sun dates.

## Caution !

Time/date changes are authorized only under the options "Date weather station" and "Date selection" and deactivated else.



The screenshot shows a window titled "Sun / Moon" with a blue title bar and standard Windows window controls. The main content area is titled "Options" and has three tabs: "Data" (selected), "more ...", and "Moon". The "Data" tab displays a list of astronomical data for December 25, 2003. On the right side of the data list, there is a small black square icon showing a thin crescent moon. The data is organized into several sections: Julian date, Universal and Local time, Westeuropäische Normalzeit, Age of moon, Moon phase, Moon's distance, Moon subtends, Sun's distance, Sun subtends, Moon phases (Last new moon, First quarter, Next full moon, Last quarter, Next new moon), Moonrise, Moontransit, Moonset, Sunrise, Suntransit, Sunset, Sun position (AZ and EL), and Sun twilight (civil, nautical, astronomical).

Parameter	Value
Julian date	2452999.38584
Universal time	21:15:36 December 25, 2003
Local time	22:15:36 December 25, 2003
Westeuropäische Normalzeit	
Age of moon	2 days, 19 hours, 20 minutes
Moon phase	9% (0% = New, 100% = Full)
Moon's distance	368466 kilometres, 57.8 Earth radii.
Moon subtends	0.5405 degrees
Sun's distance	147134475 kilometres, 0.984 astronomical units.
Sun subtends	0.5421 degrees
Last new moon	10:44 AM December 23, 2003 Lunation: 1002
First quarter	11:04 AM December 30, 2003
Next full moon	04:41 PM January 07, 2004
Last quarter	05:46 AM January 15, 2004
Next new moon	10:06 PM January 21, 2004 Lunation: 1003
Moonrise	10:16 AM December 25, 2003
Moontransit	02:14 PM December 25, 2003
Moonset	06:23 PM December 25, 2003
Sunrise	07:56 AM December 25, 2003
Suntransit	12:04 PM December 25, 2003
Sunset	04:12 PM December 25, 2003 -> 08:16
Sun position	AZ : 309.871 ° EL : -56.743 °
Sun twilight civil	07:19 AM 04:49 PM
Sun twilight nautical	06:38 AM 05:30 PM
Sun twilight astronomical	06:00 AM 06:08 PM

## Julian date

This is the current Julian date with the time represented as a fraction of a day. Be careful, when interpreting the day

fraction, to recall that Julian dates start noon, not midnight.

### Universal time

This field specifies the current Coordinated Universal Time (UCT), also known as Greenwich Mean Time (GMT). This is the time at the Prime Meridian, not adjusted for Daylight (Summer) time. This time is computed from the local time supplied by your computer's clock by applying a time zone correction. Every other number here is calculated based on this Universal time, so if it's incorrect, you'll have to adjust the time zone setting (in the Windows Control Panel's Date/Time item) to agree with your location.

**Local time** The current local time and date supplied by your computer's clock.

**Age of Moon** The time, expressed as days, hours, and minutes, since the last New Moon.

**Moon phase** Moon's phase (percent of the lunar disc illuminated, as seen from Earth).

### Moon's distance

Distance of the centre of the Moon from the centre of the Earth, given both in kilometres and Earth radii (approximately 6378.14 kilometres, neglecting equatorial flattening of the globe).

### Moon subtends

Angle subtended by the Moon in the sky. A solar eclipse will be total if the angle subtended by the Moon equals or exceeds that subtended by the Sun; otherwise the eclipse will be annular.

### Sun's distance

The distance of the Earth from the Sun in kilometres and mean astronomical units (149,597,870 km).

### Sun subtends

Angle subtended by the Sun in the sky. A solar eclipse will be total if the angle subtended by the Sun is less than that subtended by the Moon; otherwise the eclipse will be annular.

### Last new moon; First quarter; Full moon; Last quarter; Next new moon

Time and date of phases of the current lunation.

These times are accurate to about two minutes.

### Lunation

Number of the current and next lunation (interval between New Moons) in E. W. Brown's numbered series of lunations starting on 1923 January 16.

### Sun position

Shows the Position of the sun to the indicated location (Longitude/Latitude).

Is the sun on the west side from the "location" the values for Azimuth are negative.

In the night there are negative values for elevation =EL (altitude over horizon).

### Sun twilight times

Display of the morning and/or. evening twilight – times of the sun for

**civil (-6 ° EL), nautical (-12 ° EL) and/or. astronomical (-18 ° EL).**

The **normal** one Sun rise and/or. set refers to **-0.83° EL.**

### Longitude/Latitude

The coordinates (longitude /latitude degree) are set generally on the position coordinates that were entered under Location.

While changing, the **station location coordinates are not changed** with that.

For "West" or "South" select or enter negative values.

You have thus the possibility here, for arbitrary locations on the earth the sun-/moon dates let announce.

### **Next lunar eclipse - Next sun eclipse**

There is date of the next **moon eclipse** and/or. **sun eclipse** indicated.

In the astronomy one speaks of a eclipse, if a celestial body in part or completely disappears behind a bright body or in his shadow.

There are particularly favorable conditions for an eclipse (usually) twice annually.

<b>partial</b>	Partial eclipse, just a segment of the sun is obscured. This happens when the center of the moon disc and the sun disc don't meet
<b>noncentral</b>	A total eclipse, but without the centers of the shadow region hitting earth, so only the polar regions get into the total area of the shadow.
<b>annular</b>	Because of a different size of the discs there remains an illuminated ring around the shadowed part of the sun.
<b>annulartotal</b>	An eclipse which is total on part of the ground track, and annular on another part.
<b>total</b>	A total eclipse.
<b>penumbral</b>	For lunar eclipses only. The moon is not hit by the full shadow, but because of the distance from earth being too big only hit by the penumbra (half shadow).
<b>Apogee</b>	is the maximum distance of the moon from the earth.
Perigee	is the minimal distance of the moon from the earth.

### **Perihelion**

The sun-next point of a railroad of a celestial body (here earth) around the sun.

### **Aphelion**

The sun-farthest point of an elliptical orbit of planets, asteroids or comets (here earth) around the sun.

More information about the "astronomy" can you found under (for example):

<http://lexikon.astronomie.info/stichworte/> and/or <http://www.astronomie.info>

## Representation of the New moon- /full moon times an optional year

Sun / Moon

Options

Data | more ... | Moon | Moon eclipse | Sun eclipse

Year: 2012 [Print]

Newmoon		Fullmoon	
24. Dez 2011	19:07	9. Jan 2012	08:31
23. Jan 2012	08:40	7. Feb 2012	22:54
21. Feb 2012	23:35	8. Mrz 2012	10:40
22. Mrz 2012	15:38	6. Apr 2012	21:19
21. Apr 2012	09:19	6. Mai 2012	05:36
21. Mai 2012	01:48	4. Jun 2012	13:12
19. Jun 2012	17:03	3. Jul 2012	20:52
19. Jul 2012	06:25	2. Aug 2012	05:28
17. Aug 2012	17:55	31. Aug 2012	15:59
16. Sep 2012	04:11	30. Sep 2012	05:19
15. Okt 2012	14:03	29. Okt 2012	20:50
13. Nov 2012	23:09	28. Nov 2012	15:47
13. Dez 2012	09:42	28. Dez 2012	11:22
11. Jan 2013	20:44		

Local time = UTC + 1 hour  
+ 1 hour Mitteleuropäische Sommerzeit

## Moon eclipse – Sun eclipse

Sun / Moon

Options

Data | more ... | Moon | Moon eclipse | Sun eclipse

[Drucken]

4. Apr 2015	14:02	Total
28. Sep 2015	04:48	Total
23. Mrz 2016	12:48	Half shadow
16. Sep 2016	20:56	Half shadow
11. Feb 2017	01:45	Half shadow
7. Aug 2017	20:22	Total
31. Jan 2018	14:31	Total
27. Jul 2018	22:23	Total
21. Jan 2019	06:13	Total
16. Jul 2019	23:31	Total
10. Jan 2020	20:10	Half shadow
5. Jun 2020	21:25	Half shadow
5. Jul 2020	06:30	Half shadow
30. Nov 2020	10:44	Half shadow
26. Mai 2021	13:19	Total

Sun / Moon

Options

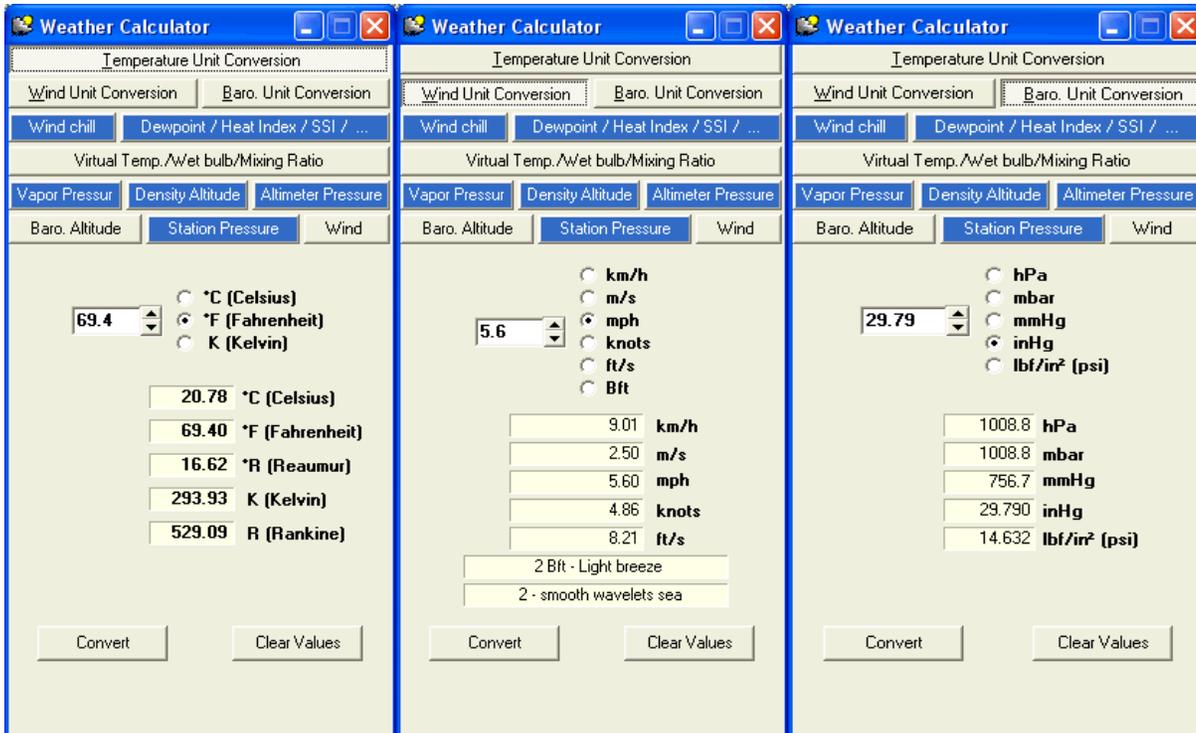
Data | more ... | Moon | Moon eclipse | Sun eclipse

[Drucken]

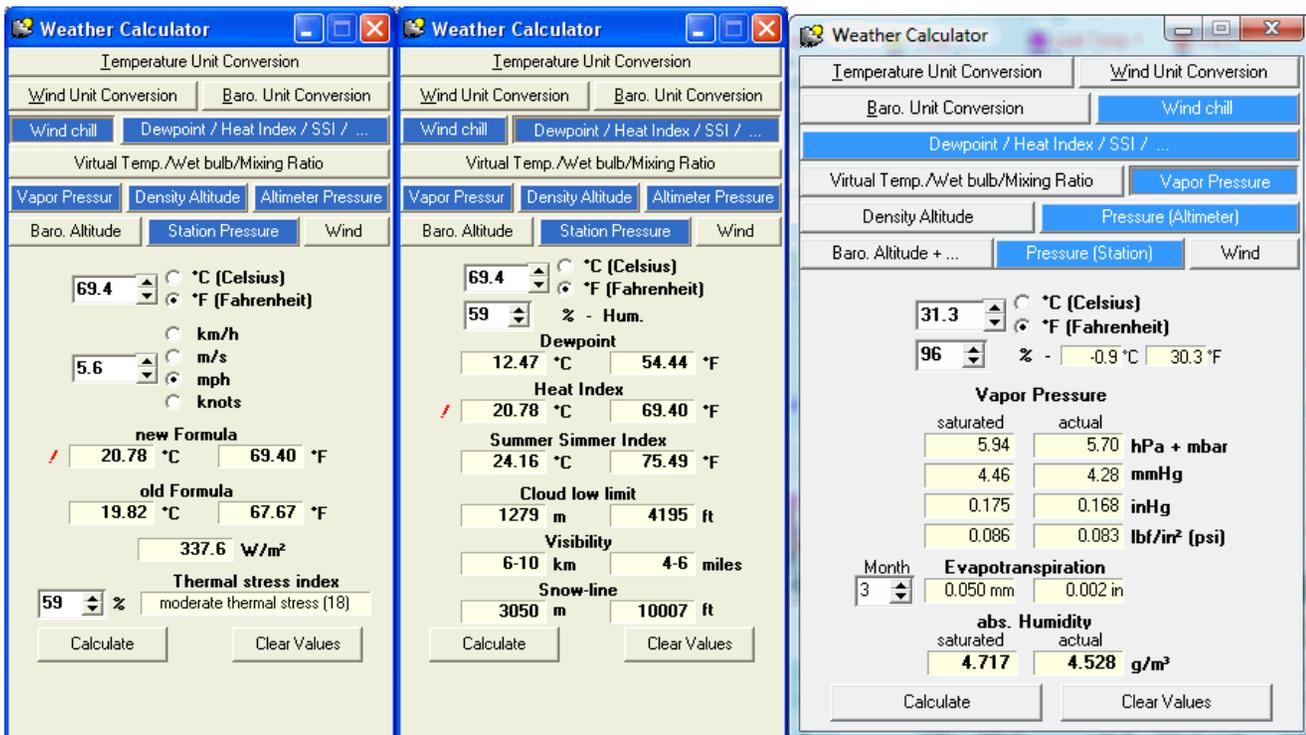
20. Mrz 2015	10:47	Total
13. Sep 2015	08:55	Partial
9. Mrz 2016	02:58	Total
1. Sep 2016	11:08	Circular
26. Feb 2017	15:54	Circular
21. Aug 2017	20:27	Total
15. Feb 2018	21:52	Partial
13. Jul 2018	05:02	Partial
11. Aug 2018	11:47	Partial
6. Jan 2019	02:42	Partial
2. Jul 2019	21:23	Total
26. Dez 2019	06:19	Circular
21. Jun 2020	08:41	Circular
14. Dez 2020	17:15	Total
10. Jun 2021	12:43	Circular

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# Weather Calculator



A red exclamation mark ("!") points out onto that, that one of the calm values is outside of the defaulted specifications: for example with the heat index the temperature must be  $\geq 26.7^{\circ}\text{C} / 80^{\circ}\text{F}$  !!!!



The top row shows three instances of the Weather Calculator application:

- Left instance:** "Temperature Unit Conversion" mode. Inputs: 69.4 °C (Celsius), 59 °F (Fahrenheit), 12.5 °C, 54.4 °F. Results: Vapor Pressure (saturated: 24.49 hPa + mbar, actual: 14.45 hPa + mbar, 18.37 mmHg, 0.723 inHg, 0.355 lbf/in² (psi)), Humidity (saturated: 18.127 g/m³, actual: 10.668 g/m³).
- Middle instance:** "Wind chill" mode. Inputs: 47.7 °C (Celsius), 78 °F (Fahrenheit), 5.1 °C, 41.2 °F. Results: 867.48 Meter, 2846.05 Feet, Air density: 1.1268 kg/m³.
- Right instance:** "Station Pressure" mode. Inputs: 2591.9 Meter, 27.20 hPa + mbar, 69.4 °C (Celsius), 69.4 °F (Fahrenheit). Results: Temp. corrected: 1014 hPa + mbar, 761 mmHg, 29.94 inHg; Alternative: 1008.92 hPa + mbar, 756.75 mmHg, 29.793 inHg; Alternative: 1012.13 hPa + mbar, 759.16 mmHg, 29.888 inHg.

The bottom row shows three instances of the Weather Calculator application:

- Left instance:** "Wind Unit Conversion" mode. Inputs: 29.921 hPa + mbar, 0.07 Meter, 0.22 Feet, EL 19, 160000 lux, 200 max Lux. Results: 38504.00002314814630000, 0750100000, 19:49:00 21.05.2002.
- Middle instance:** "Density Altitude" mode. Inputs: 2591.9 Meter, 29.79 hPa + mbar, 69.4 °C (Celsius), 69.4 °F (Fahrenheit). Results: Temp. corrected: 916 hPa + mbar, 687 mmHg, 27.05 inHg; Alternative: 921.00 hPa + mbar, 690.80 mmHg, 27.197 inHg; Alternative: 917.78 hPa + mbar, 688.39 mmHg, 27.102 inHg.
- Right instance:** "Wind speed" mode. Inputs: 5.6 km/h, 28.0 Meter, 1.040 factor. Results: really Wind speed: 5.83 mph.

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# Location

For a correct read-out of the air pressure in the Operating- and Data Acquisition Software the altitude of the location must be indicated in meters above Normal null (NN) [= above Sea level]. This value is employed during the **conversion** of the measured value supplied from the sensor.

## Formula for the calculation of the air pressure for **ELV PC wireless - interface**:

Read in air pressure value of the sensor + 199 + (Altitude / 9 )

## Formula for the calculation of the air pressure for **Weather Station WMR-918/WM-918**:

Read in air pressure value of the sensor + 795 + (Altitude / 8.5 )

## Formula for the calculation of the air pressure for **Weather Station WMR-968**:

Read in air pressure value of the sensor + 600 + (Altitude / 8.5 )

For the **Weather Stations WMR-918/968** one can check the employed **air pressure correction** for "sea level" at Status Wireless interface (sea level reference).

**Caution Changes:** the former ones 9 m were readjusted on 8.5m  
Per 8.5 m altitude the air pressure is increased about 1 hPa - the 8.5 meters employed are in this case a mean value.

**Consider !** The ELV/LaCrosse stations use a factor **Altitude/9** for the sealevel correction.  
**Here you also receive the value that you must tune at these stations.**

If you need **very precise air pressure values**, you must readjust on "temperature compensated correction".

However, is with these changes combined, that at your display (WS1000, WS2000, WS2200 and so forth and/or. Huger WM-918/WMR-918/WMR968) the display with the value of the software agree no more absolute.

For this calculation in addition, valid dates of the "main" outside temperature sensor are necessary.

At this choice, the edition of the air pressure values is readjusted on representation with „one“ decimal place.

## Adjustment of the barometer gauge:

For the balancing out of the pressure gauge one can use the data of the **weather offices** and/or data from Internet (for example

<http://deutsch.wunderground.com/global/DL.html> or <http://www.dwd.de/forecasts/texte/deu.htm>).

Compare these values with the values of the PC Wireless Interface.

If there is a difference, change your altitude correspondingly so that the values agree.

## Actual conversion factors for Barometer (air pressure):

Reference 1013 hPa at 0 m

Calculation for 800 m above sea level:                   ->       800/(1013-921) = 8.695 m

<b>Altitude</b>	<b>m</b>	<b>0</b>	<b>200</b>	<b>400</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1500</b>	<b>2000</b>	
<b>Pressure</b>	<b>hPa</b>	<b>1013</b>	<b>989</b>	<b>966</b>	<b>943</b>	<b>921</b>	<b>899</b>	<b>842</b>	<b>795</b>	
Correction	per	0.00	8.33	8.51	8.57	8.69	8.77	8.77	9.17	<b>m 1 hPa</b>

= actual barometer correction of 1 hPa per indicated value with corresponding altitude above sea level

-> at 800 altitude above NN the read in air pressure value must be increased around (800/8.69) = 92 hPa!

-> in order to receive a very precise correction, you must put in with the defaulted 9 m an altitude of 828 m !

The **air pressure value under the feet/meter-information** is the reduction value that was entered at the station WMx-9x8 to display the correct Sealevel pressure and/or that one results from the location altitude near the other weather stations.

**This value** (here for example 96 hPa) is employed too with the import of the Skyviewlogger files and/or with the convert of the WS2300 meteorological data

- This program reckons always on the station air pressure - related to sea level therefore to the not reduced air pressure
- Correct dates for the location altitude and/or **this value** (at the import Skyview /convert WS2300) are assumption for correct air pressure dates

Since the VantagePro makes available the temperature-compensated for correction automatically, no alteration is anticipated at this weather station!

This value is **patched automatic**, when it lies **outside** of **"(Altitude/8.5) ± 20 %"** !

Example:

at 820 meters: -> allowed value: **77 - 116**

at 300 meters: -> allowed value: **42 - 28**

at 10 meters: -> allowed value: **0 - 1**

Please enter your station dates and your personal dates here. They are needed for "Internet-files" and the weather archive.

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# Plausibility control

If this options is chosen: "Check read in weather data with plausibility", then the read in weather data are checked according to the following criteria and/or corrected where appropriate !

The valid value read in last serves as adjustment value!

At **Status of wireless Interface** and turned on option "Show status information..." you have additional possibilities to take influence ! **(is not valid for WM-918)**.

For the Weather Station WMR-918 the measuring interval with the value "3" is defaulted for the calculation fixedly.

## Temperature

Deviation of the read in value **around +/- 5+(measuring interval/3)**

for example at 3 min interval time: **+/- 6 ° C**

## Humidity

Deviation of the read in value **of +/- 6\* measuring interval**

for example at 3 min interval time: **+/- 18 %**

## Barometer

Deviation of the read in value **of +/- 1\* measuring interval**

for example at 3 min interval time: **+/- 3 hPa**

## Rain amount

Deviation of the read in value **of +/- 8\* measuring interval**

for example at 3 min interval time: **+/- of 24 metering pulses**

## Wind speed

Deviation of the read in value **of +/- 15\* measuring interval**

for example at 3 min interval time: **+/- 45 k.p.h.**

(at WMx-918/968 firmly on 30 k.p.h.)

## Wind direction

no check, no correction

Corrections are carried out maximally for four hours.

-> according to the following formula:

with measuring interval  $\geq$  of **30 minutes max. 8 corrections**

else corrections: **240/interval**

for example at 3 min interval time: 80 corrections

For the **limit values of the sensors**, for example -30 ° C or +90, no corrections are done.

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# Control

The control of the Operating- and Data Acquisition Software can occur with the mouse and the keyboard. With input and selection the keys "Enter" and "Esc" have a special meaning.

Key	Function	Description
Enter	Ok	Save input / confirm selection
Esc	Cancel	Reject input / interrupt selection
>	Forward	Diagram Page forward
<	Back	Diagram Page back
↑	Up	Cursor for display bar one value back
↓	Down	Cursor for display bar one value forward
PgUp	Back	Cursor for display bar 10 values back
PgDown	Forward	Cursor for display bar 10 values in forward
POS1	Beginning	Put cursors for display bar onto first value in the diagram
End	End	Put cursors for display bar onto last value in the diagram

If there is no reaction when pressing the left-/right arrow keys, press in addition the "ALT" key once!

For the fast call of the most important functions in the main window a great number of function keys and key combinations are at your disposal. By this, changing from the keyboard to the mouse and vice versa is not necessary in many cases.

Button	Function
F3	Choose period
F4	Period view
F12	Day normal view
Shift F12	Day 24h view
Alt+Ctrl+J	Jump to current day
F6	Week view
F7	Month view
F8	Year view
F9	Choose measured items

## F5 Update/refresh display

If the program window is not displayed completely any more (for example after stand-by-operation, screen saver etc.), you can update the display again with this function.

Strg+A	Define thresholds
Strg+C	Choose comparison
Strg+D	Display window on/off
Strg+E	Edit measured values
Strg+I	Import weather data
Strg+M	Show minimum and maximum values
Strg+O	Stop recording
Strg+S	Start recording
Strg+P	Print graphics
Strg+T	Show table
Strg+X	Export weather data
Alt+Enter	Modify qualities of the measurement values

Shift+Ctrl+F1	Choice of the view profile 1	(provided that stored)
Shift+Ctrl+F2	Choice of the view profile 2	(provided that stored)
Shift+Ctrl+F3	Choice of the view profile 3	(provided that stored)

Shift+F1	Single view of sensors -> Indoor sensor
Shift+F2	Single view of sensors -> Outdoor sensor
Shift+F3	Single view of sensors -> Sensor 1

Shift+F4      Single view of sensors -> Rain sensor  
Shift+F5      Single view of sensors -> Wind sensor  
Shift+F6      Single view of sensors -> Sun sensor

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# Wswin.cfg

Specific settings in the Wswin.cfg.

**Consider!** Modifications in the wswin.cfg should only be executed if the program does not run - otherwise these modifications become again „discarded“!

## [Export]

TextFileAktuell=1 -> default = 0 : the data in the aktuell.txt becomes in it  
Cast off reverse sequence (like aktuell.htm). I.e. the  
Newest data always stand in the 3. line!

## [html]

AlwaysDate=0 -> default = 0 : at "1" become at the moon/sun time always  
the day (for example 30th April 2001) also at the current day outputted

CustomFiles=20 max. number of work off customised files  
Allowed range 1..255 -> default 20

TemplateCount=5 max. number of work off Template lines in one file  
Allowed range 1..20 -> default 5

## [Options]

ShowPassword=0 -> default = 0 : at "1" there is no possibility of Showing of the passwords  
in clear text  
**Consider: Passwords <4 signs are not coded!**

ErrorLog=1 Setting to 1 (ErrorLogHead=1) and Error logging is on  
ErrorLogHead=0 (ErrorLog=1), become additionally to the errors the start- and Stopp data of the wireless  
interface each Wswin program start logged!

# Ws\_controll.cfg

## **CAUTION !!!**                      **ONLY something for absolute PROF**

Who would like to work with that itself must be conscious, which it does with that !

Use only onto own DANGER and responsibility !

With damages no responsibility is taken over.

With the use of this "control-file" in the program-folder you can "remote-control" WsWin.

**Only** during the "**Recording mode**" it is checked all minutes whether there is such a file, if it is found, his entries are worked off and the file are **renamed** after that to "**ws\_controll.old**" !

With that you have the possibility, there are during the Recording mode a lot function are deactivated, to carry out changes in spite of that, or for example also for DEMO mode suitable"

Example ws\_controll.cfg

---

[Settings]

AltKondNiveau=1

[MiniDisplay]

Show=1

---

What happens after processing of this file:

The calculation of the cloud low limit is readjusted on the alternative calculation mode and the representation of the Minidisplay is turned on.

## **Supported Parameter:**

For most of the Options are only „0“=off and/or „1“=on possible

[Options]

AutoStart=1

StatusInfo=1

Plausibel=1

ErrorLog=1

ErrorLogHead=0

StColor=1

ForceDCF=0

TimeKorr=1

AltAvgDayCalc=0

[Settings]

; allowed values for View 1,2,3 =View Profiles 1..3 -> for the changeover of the representation - for example time-controlled

View=0

RegenAnzeigeS=0

RegenAnzeigeV=1

MoonTime=0

UpdateMoonSun=0

SunRiseSetShow=1

NoWindDirLine=1

MoonSetShow=1

DayTemplate=1

WeekTemplate=0

MonthTemplate=1

YearTemplate=1

ShowSunTime=1

WindDirDot=1

NoaaMonthTemplate=1

NoaaYearTemplate=1  
AltKondNiveau=1

EmailReport:=1  
EmailReportTime=600  
EmailAConfig:=1 ;configuration for alarm email sent.  
EmailRConfig:=1 ;configuration for (report-) email sent.  
;allowed values 1..3 for EmailAConfig and EmailRConfig  
EmailReportTimeOffset=0  
;allowed values for **EmailReportTimeOffset** 1..60 -> 0 not activ  
;therefore the **EmailReportTime** is automatical set to current timet + offset minutes.  
;Example: Current Time **23:23**, EmailReportTime=**60**  
-> the email report is sent at **00:23**  
**the other EmailReportTimes (4) are not variable**

**; following parameters are relevant only in the registered version ;)**

; PrgEndTime in minutes after midnight  
PrgEndTime=9

; allowed values for **PrgEndTimeOffset** 1 ..60, with other value, this parameter is ignored!  
; with it becomes automatically **PrgEndTime** on the current time + placed the offset minutes.  
; Example: current time **15:03**, PrgEndTimeOffset=**5** -> the program ends at **15:08**  
**PrgEndTimeOffset=0**

; allowed value for PrgEndOpt  
;0= not active  
;1= close program  
;2= close program + restart Windows  
;3= close program + shutdown Windows + Power off  
;4= close program + start other program

; are 10 adds to the values 1..4 -> , so 11..14, only valid once (**1x**) and after that carrying out becomes automatic onto  
„0“ = **not activ** reseted  
; at the values 11..13 the parameter **PrgEndDays** are ignored, so as "0" would be set  
PrgEndOpt=0  
;PrgEndDays 0=all days, normally Binary OR-operation Monday=Bit 0 .. Sunday=Bit 6  
PrgEndDays=0  
PrgEndPrg=C:\Programme\WinExit Pro\WinExit.exe  
PrgEndParam=/neustart

; values for PrgRestart:  
; 0=inaktive  
; 1=Monday; 2=Tuesday; 4=Wednesday; 8=Thursday; 16=Friday; 32=Saturday; 64=Sunday;  
; with several days, it is an addition of the day values!  
PrgRestart=0  
; PrgRestartTime in minutes after midnight  
PrgRestartTime=360 -> here 06:00 o'clock  
; allowed values for **PrgRestartTimeOffset** 1 ..60, with other value, this parameter is ignored!  
; with it becomes automatically **PrgRestartTime** on the current time + placed the offset minutes.  
; Example: current time **15:03**, PrgRestartTime=**5** -> the program starts again by **15:08**  
; PrgRestart is put automatically on that occasion on the relevant day, several days were supposed to have  
discontinued, gets lost the "other" days so!  
**PrgRestartTimeOffset=5**

#### [Colors]

LinieOGColorOn=1  
LinieOGColorThick=0

#### [View]

ShowBaroLinie=1  
Show1013BaroLinie=0  
;MiniGraphWidth =Mini-Graphics Width in pixel, allowed 170 ... 640  
MiniGraphWidth=312  
;MiniGraphHeight =Mini-Graphics Height in pixel allowed 133 ... 640  
MiniGraphHeight:=224

### [MiniDisplay]

Show=0

### [Display]

;allowed range -10 ... 30

PlusPixel=0

;0= None homogeneous background color = no gradient

;1= TopBottom

;2= BottomTop

;3= LeftRight

;4= RightLeft

;5= FromCenter

;6= FromTopLeft

;7= FromBottomLeft

Gradient=0

Show=0

### [Html]

Auto=0

FtpAutoStart=0

HtmlDateien=1

Anzahl=10

AutoAnzahl=0

ForceTop=1

GifColorNoR=1

JahrMinMax=1

GifWindR=0

FtpExtern=0

FtpZeitA=0

FtpZeit5=1

FtpZeit10=0

FtpZeit15=0

FtpZeit30=0

FtpZeit1=0

FtpZeit2=0

FtpZeit3=0

FtpZeit6=0

FtpZeit12=0

FtpZeit24=0

Aufwecken=0

Statistik=1

NoWocheHTM=0

AnzahlStd=1

CustomFile=0

AnzahlAlle=0

HtmlNoStart=0

Blank\_Unit=1

FtpAktiv=1

FtpIntern=0

FtpAutoAkt=1

FtpCfgUpL=1

FtpNoDisCon=0

; FtpTimeStart/FtpTimeEnd During in that time controlling is supposed to occur – in minutes after midnight

; only relevant when **FtpTimeAlways=0**

FtpTimeStart=480

FtpTimeEnd=1380  
FtpTimeAllways=1  
NoWocheGif=0  
NoMonatGif=0  
NoJahrGif=0  
GifWDTxt=1  
Seeforce=0  
Moon=1  
Sun=1  
DateShort=0  
AlwaysDate=0  
DateTimeChange=1  
MiniDisplay=1  
Thermic=1  
HtmlAltRelHum=1  
HtmlMinMax=1  
DayGif=0  
DayTemplate=0  
WeekTemplate=0  
MonthTemplate=1  
YearTemplate=1  
YDayGif=1  
WeekGif=1  
IceDays=1  
WindDirGraphic=1  
AllDayGif=0  
AktuellGif=0  
MiniGraphic=1  
TransAuto=1  
TransCurrent=1  
TransCustom=1  
TransMiniDisp=1  
TransMiniGraph=1  
TransNoAktuellGif=0  
TransWDirGraphic=1  
MiniGraphicWeek=0  
MiniGraphicMonth=1  
MiniGraphicYear=1  
SingleWeekGif=1

#### [1]

; sensor values are [1] ... [46] possible - - here the indoor sensor=1 is available, only as models as an example

Visible=1  
AutoSkal=1  
Html=1  
MiniGraph=1  
MinMaxYear=1  
Speech=1

#### [Wunderground]

T1hour=0  
WG\_FTP=0

#### [Forecast]

; own Weather forecast text – look at Weather station, Weather forecast, “Texts”

Text1=  
Text2=  
Text3=

#### [Own]

; own optional text, also anticipated for fade-in in **MiniDisplay**

Text1=

Text2=  
Text3=  
Text4=  
Text5=  
Text6=

**[Weather]**

; external supply of the snow depth in cm

Snow=0.000

Functions

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# Command Line Options

Caution! This functionality is available only in the full version !

The program supports the following starting parameters:

**/Language=x /auto [/Down] [/Ftp] [/WG] [/WA] [/ER] [/PID] [/All] | [/no] [/Txt] | [/config]**

Starting parameter for the programming language **/Language=x**

x=0	German
x=1	English
x=2	French
x=3	Italian
x=4	Czech
x=5	Dutch
x=6	Spain

**must be the 1st parameter** and must contain "="

If you start the program with the starting parameter "**/auto**"

the weather data are read out after the start immediately and the program is finished after this (with an automatically answered interrogation).

With this parameter there is no need to enable the program-options "Automatically read out weather data at start" and "Automatically close program after read out".

The sense of this parameter is, that you can fetch the weather data automatically with a Schedule-Program periodically without having to change the normal program run !

The starting parameter "**/no**"

disables the options "**create updated data files in recording mode**", "**update Internet files automatic**" and/or "**autom. Create export file**" temporarily.

This parameter has **priority before "/Ftp", "/WG" and/or "/All" and require "/auto"** ("/Ftp", "/WG", "/All" do not work with this parameter !).

With the corresponding options in "Internet options" and/or. additional parameter "**/ftp**" one can create the current files and/or update the Internet files (table/graphics) and further transmit them by FTP to a WEB server.

If you add to the 1st parameter and/or 2nd parameter the parameter "**/all**",

the function "Update Internet files ..." will be started after the read out of the weather data - for this parameter the corresponding options in menu "Internet-properties" - "**update Internet files automatic**" and "**create updated data files in recording mode**" are not necessary. The updating of the Internet files occurs in this case with every call with this parameter - unlike the option, where the updating occurs only once a day.

If you add to the 1./2. and/or. 3rd parameter the parameter "**/down**"

Windows (Win95/98/NT etc.) will shut down after the read-out of the weather data and the termination of the program. If there is a corresponding motherboard installed (with support for Advanced Power management) and this function is activated in Windows the computer will be switched off.

Because with this option the program automatically ends after 10 seconds, and Windows is also ended after that, the FTP transfer may not be finished yet. Therefore you can change this 10 seconds - delay:

In wswin.cfg:

[Options]

**Timeout=10** increase this value correspondingly.

If you add to the 1st., 2 and/or. 3rd parameter the parameter "**/ftp**"

after the read-out of the weather data the current files are created and transmitted then with the external FTP program

For this parameter the following **options** do not have to be set:

- make current-files in case of recording
- transmit data after automatic read out
- Execute external Ftp-program

Condition is, however:

Under "**external FTP-program**" must be an entry and this program must also be available.

The starting parameter "**/WG**"

makes the program initiate the transmission of the last data record to Wunderground.com after the read-out of the weather data. The necessary conditions (Station-ID, password) must of course be fulfilled.

The starting parameter "**/WA**"

for data transfer to [wetterarchiv.de](http://wetterarchiv.de) and/or [awekas](http://awekas.com) at auto start-up/auto read

The starting parameter "**/ER**"

for send [email report](#) at auto start-up/auto read

The starting parameter "**/PID**"

Wswin writes in the file WSWINERR.TXT (only if error log activated) the process ID of the current Wswin. For another program to use this information.

The starting parameter "**/txt**"

makes the program create an export-text-file automatically after the read-out of the weather data - with the data of the last 24 hours and/or the current day.

The starting parameter "**/config**"

makes the program use the alternative configuration file "[wswina.cfg](#)".

Between the parameters a blank is urgently necessary - the precedence is arbitrary !

#### **Example Applications:**

```
C:\Program Files\Wswin\wswin32.exe /auto
C:\Program Files\Wswin\wswin32.exe /auto /down
C:\Program Files\Wswin\wswin32.exe /auto /ftp
C:\Program Files\Wswin\wswin32.exe /auto /all /ftp
C:\Program Files\Wswin\wswin32.exe /auto /all /ftp /down
C:\Program Files\Wswin\wswin32.exe /auto /no
C:\Program Files\Wswin\wswin32.exe /config
```

[Functions](#)

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# Files

The following list describes all program files of the Operating- and Data Acquisition Software as well as the data files which are created during the running automatically.

**Folders** **Default settings (C:\Wswin = %Installation Folder%)**  
**Under Vista and Windows 7/8/10 is C:\Wswin proposed and should also be used -**  
**> NOT %ProgramFiles%!!!**

Program-folder	%Installation Folder%
Data-folder	%Installation Folder%
HTML-folder	%Installation Folder%\Html
Usericons	%Installation Folder%\Html\usericons (for wswin-custom-x.txt)
Text-folder	%Installation Folder%\Text
WAP-folder	%Installation Folder%\Wap
Aprs-folder	%Installation Folder%\Aprs
Export-folder	%Installation Folder%\Export (not changeable!)
Export-folder extra	%Installation Folder%\AllData (not changeable!)
PDF-folder	%Installation Folder%\PDF (not changeable!)
Synop/Metar-folder	%Installation Folder%\SynopMetar
Debug-folder	%Installation Folder%\Debug (not changeable!)

All folders - apart from program+export+PDF-folder - can be changed subsequently.

File	Description
WSWIN32 .EXE	32Bit-Programm (only executable under Win95/98 and WinNT/2000)
WSWIN32 .HLP	32Bit -on-line help (with graphics) -can be German or English
WSWin32en.HLP	32Bit -Online-help in English (provided that available)
NetAtmoXML.exe	Utility for the Netatmo stations
netatmostart10.cmd	timed utility to control the netatmox.cmd
netatmox.cmd	Utility that collects data from NetAtmo
Usb.dll	Helper program for TE923
WsWinAprs .exe	Helper program for transfer APRS/CWOP data
Wswin_TE923usb.exe	Helper program for correction of the Registry for the TE923 Stations
Winhlp.cmd	Helper program so that the Program help functions works again
WSWIN .CFG	Configuration file
WSWINa .CFG	Alternative configuration file
wswin_www.cfg	Hold the configurations for the WWW Templates
WS_HIS .TXT	File with the statistic dates
Wswin_customfiles.cfg	Control file for all customised files
Ws_controll.cfg	Control file only at recording mode
watch .txt	Example-Control file for later CSV-data importing
wswin_x-csv_import.cfg	Configuration file for X-CSV File-Watching
wswin_language.txt	Translation file with <b>original language</b> <=> <b>new language</b>
WS_MM_YY.DAT	Monthly file for the weather data in the month MM and year YY
WM_MM_YY.DAT	Monthly file for Weather Station WMR-918
WD_MM_JJ.DAT	Monthly file for Weather Station Davis Vantage(Pro)
WS_YYYY.DAT	Year-File for Weather Station WS2000/WS2500
WM_YYYY.DAT	Year-File for Weather Station WM918/WMR-918/WMR968/WMR928
WD_YYYY.DAT	Year-File for Weather Station Davis Weatherlink/VantagePro
WSARCHIV.MDB	MS-Access-Database for weather reports
EXPMM_YY.CSV	Month-export-/import file for month MM and year YY
EXPMM_YYidx.CSV	Single Sensor xx Month-Export-/Import-File für Month MM and Year YY
RainYYYYMM.CSV	Month-Export-/Import-File only with existing rain values
WSWIN . TRC	Com-Port Interface-record-file.

WSWINERR.TXT Error - record - file  
 Ws\_debug\_email.txt Email protocol file  
 Ws\_debug\_report.txt Report protocol file  
 Ws\_debug\_speech.txt Speech protocol file  
 Ws\_debug\_wa.txt Wetterarchiv protocol file

WS\_MM\_YY.ALT saved monthly file for the weather data of old software-version  
 WS\_MM\_YY.WS3 - can be deleted. The old files are converted automatically to the new format.  
 WM\_MM\_YY.WS3

Data file construction:

18 bytes Header - Identification in the header: WS3data file  
 72 bytes Data per weather data record (with 42 sensor values)

Construction old data file format:

18 bytes Header - Identification in the header: WS1data file  
 220 bytes Data per weather data record (with 36 sensor values)

Construction data file Weather Station **WMR-918**:

18 bytes Header - Identification in the header: WM1data file  
 30 bytes Data per weather data record (with 15 sensor values)

Construction data file **Weatherlink/VantagePro**:

18 Byte Header - Identification in the header: WD4data file  
 76 Byte Data per weather data record

- maximum memory requirement for a monthly file with 31 days and measuring interval of 3 min.
- $18 + ([24 \cdot 60 / 3 = ]480 \cdot 72) \cdot 31 \rightarrow 1.071.378 \text{ bytes (1.1 MB)}$
- $18 + ([24 \cdot 60 / 3 = ]480 \cdot 220) \cdot 31 \rightarrow 3.273.618 \text{ bytes (3.3 MB) = old data file}$
- maximum memory requirement for Weather Station with 31 days and storage interval of 1 min.
- $18 + ([24 \cdot 60 = ]1440 \cdot 30) \cdot 31 \rightarrow 1.339.218 \text{ bytes (1.3 MB) for WMR-918}$
- maximum memory requirement for Weather Station with 31 days and storage interval of 2 min.
- $18 + ([24 \cdot 30 = ]720 \cdot 30) \cdot 31 \rightarrow 669.618 \text{ bytes (0.7 MB) for WMR-918}$
- maximum memory requirement for Weather Station with 31 days and storage interval of 1 min.
- $18 + ([24 \cdot 60 = ]1440 \cdot 76) \cdot 31 \rightarrow 3.395.014 \text{ Bytes (3.4 MB) for Weatherlink/VantagePro}$
- maximum memory requirement for Weather Station with 31 days and storage interval of 2 min.
- $18 + ([24 \cdot 30 = ]720 \cdot 76) \cdot 31 \rightarrow 1.696.338 \text{ Bytes (1.7 MB) for Weatherlink/VantagePro}$

**Internet files:**

libSMBM .js Necessary JavaScript for start.html - not necessarily on WEB-side

start.html Menu main file (or the selected file name for Start page).  
 start.txt Individual properties for start.html.  
 auf.gif Graphics for start.html  
 ab.gif Graphics for start.html  
 6x6.gif Graphics for start.html  
 kopf.html File with the Location-data  
 leer.html Auxiliary file for displaying of the tables and/or graphics.  
 info.html Displays of information for own importance (into this file becomes aktuell.gif merged)

instrumente.html Intended for showing of the Instruments-Graphics  
 table\_head.html Data file about binding for information in the „head“ - tables  
 table\_foot.html Data file about binding for information in the „foot“ - tables  
 wstation.html Displays information for own importance – for example for showing information about the own Weather Station

current.html Weather symbolic file  
 minmaxYYYY.htm Minimum/Maximum values table for year YYYY

minmaxYYYYMM.htm Minimum/Maximum values table for year YYYY month MM

### Current files:

aktuell.htm automatically made table with the last 10 (5-40) weather data values  
aktuell.gif current weather data graphics file  
aktuell .txt automatically created export-file (CSV-Format)  
ws\_report .txt Report File  
minidisplay.gif automatically created Mini-Display-representation  
ddis\_current.gif current wind distribution graphic file  
ddis\_f\_current.gif current wind direction/Wind  
windbft\_current.gif current distribution Wind gust  
mini\_currentx.gif Minigraphics for single sensors (x) - look below  
mmini\_currentx.gif 2.Set Minigraphics for single sensors (x) - look below

### Customised Html file(s):

wswin-custom-x.sec Control file for special informative WEB page  
wap-smartweather-x1.txt First Control file for a SmartPhone WEB-Site  
wswin-analyse.txt Control File for Overview of he Configuration of he Station

custom .txt first Control file for user defined WEB pages  
wap .txt first Control file (for example) for user defined WAP-WEB pages  
wswin\_nrt.txt first Control file (for example) for user defined RealTime-pages  
ws\_secure.txt first Control file for coding of user files

ws\_speech.txt Control file for speech output  
ws\_speech1h.txt Control file for spoken text each hour  
custom\_r.txt Control file for Report (file and/or email)  
custom\_rw.txt Control file for Week-Report email  
custom\_rm.txt Control file for Month-Report email  
custom\_sms.txt Control file for Email in one line  
import .csv Control file for CSV-data-import (Example-File name)  
ws\_newdata.csv Export file for other programs (for example SQL)  
ws\_merge.csv Import file for "supplies" as well as "overcharging" of data during record

### Template files:

template\_test~.txt first Test-Template-control file  
template\_t.txt first Test-Template-control file (for testing of templates)  
template\_time.txt first Time-Template-control file  
template\_d.txt first Day-Template-control file  
template\_day.txt first Day-Template-control file (only for "Update graphics/tables")  
template\_yest.txt first Yesterday-Template-control file  
template\_w.txt first Week-Template-control file  
template\_m.txt first Month-Template-control file  
template\_y.txt first Year-Template-control file  
template\_season.txt Season Template file  
emplate\_noaa\_m.txt Month-NOAA-Template-control file  
template\_noaa\_y.txt Year-NOAA-Template-control file  
template\_season.txt Season-Template-control file

wswin\_xml.txt File for append variables Variable %var% Text with XML-Code  
wswin\_xml\_mod.txt Result file with added XML-Code <var>%var%</var>

### Report-files:

Ws\_report0.txt Attachment at email report (optional)  
Ws\_report?.txt Attachment at alarm-email - ? = 1..46 for sensor number. (optional)

### Weather symbolic files:

current .html Main file for symbolic file  
thermic.gif,thermic0.gif,thermic1.gif PMV: heat, normal, cold  
asun.gif, asuncl.gif, acloud.gif, arain.gif Files for weather forecast  
acloud0.gif,astorm.gif,asnow.gif,awind.gif Files for weather forecast

p_do.gif, p_up.gif, p_s.gif	Files for air pressure tendency
cal.gif, clock.gif, day.gif	Files for times
barom.gif, dewp.gif, hum.gif, temp.gif	Files for sensor values
wind.gif, windb.gif, windc.gif, windr.gif	Files for wind
hour.gif, month.gif, week.gif, year.gif	Files for rain
rain.gif, rainday.gif	Files for rain
frost.gif	File for last frost
sea0.gif, sea1.gif, sea2.gif	Files for state of sea
sdark.gif, shazy.gif, sstcloudy.gif	Files for cloudy /sunny
scloudy.gif, sslcloudy.gif, ssunny.gif	
sunbr.gif, uv.gif, et.gif	Files for sun
winddir.gif, n.gif, nne.gif, ne.gif, ene.gif e.gif, ese.gif, se.gif, sse.gif s.gif, ssw.gif, sw.gif, wsw.gif w.gif, wnw.gif, nw.gif, nnw.gif	Wind direction symbols
moon.gif,sun.gif	anim. Moon graphic, Sun
moon14.gif,moon0.gif,moon7.gif,moon22.gif	Fullmoon,Newmond, down..Moon, up.Moon
moon0.. – moon30.gif	Moon phase days
forec1.gif,forec2 ... forec7.gif	additional weather forecast - Icons
batterie.gif, bat.gif, bat0.gif, bat25.gif bat50.gif, bat75.gif, bat100.gif sound.gif, sound1.gif, co2.gif	Netatmo graphics
Table files:	
yYYYY .htm	Year-Htm-table - y2000.htm
mYYYYMM .htm	Month-Htm-table - m200003.htm
wYYYY_WW .htm	Week-Htm-table - w2000_10.htm
YYYYMMTT .htm	Day-Htm-table - 20000331.htm

**Graphics files:** - The program makes **GIF files**, also **JPG files are supported**

Day graphic files:

Day1.gif	Day graphic Monday
Day2.gif	Day graphic Tuesday
Day3.gif	Day graphic Wednesday
Day4.gif	Day graphic Thursday
Day5.gif	Day graphic Friday
Day6.gif	Day graphic Saturday
Day7.gif	Day graphic Sunday
Yesterday.gif	Day graphic from yesterday
Ddis_day1.gif	Wind distribution day graphic Monday
Ddis_day2.gif	Wind distribution day graphic Tuesday
Ddis_day3.gif	Wind distribution day graphic Wednesday
Ddis_day4.gif	Wind distribution day graphic Thursday
Ddis_day5.gif	Wind distribution day graphic Friday
Ddis_day6.gif	Wind distribution day graphic Saturday
Ddis_day7.gif	Wind distribution day graphic Sunday
windbft_day?.gif	Wind distribution Wind force for day x
Ddis_yesterday.gif	Wind distribution day graphic from yesterday
Ddis_f_yesterday.gif	Wind distribution /Wind force day graphic from yesterday

Week graphics files:

Week.gif	Week graphick
Ddis_week.gif	Wind distribution week graphic
Ddis_f_week.gif	Wind distribution Direction/Wind from week
windbft_week.gif	Wind distribution Wind force for week

<b>snow_y?????.gif</b>	<b>Snow depth</b>
<b>greenland_?????.gif</b>	<b>Growing temperature</b>
<b>warmsum_?????.gif</b>	<b>Thermal Sum</b>
<b>frostsum_?????.gif</b>	<b>Frost Sum</b>

**History-Graphics-File:**

<b>wind_y?????.gif</b>	<b>Wind Run</b>
<b>his_y?????.gif</b>	<b>Temperature</b>
<b>his_r_y?????.gif</b>	<b>Temperature and Precipitation</b>
<b>rainsun_y?????.gif</b>	<b>Rain/Sun</b>
<b>solarenergy_y?????.gif</b>	<b>Solarenergy</b>
<b>clima_y?????.gif</b>	<b>Climadiagram</b>
<b>clima_y.gif</b>	<b>Longtime Clima diagram</b>

For **????** insert the year number.

**Longtime graphics:**

long_temp.gif	Temperature-Compare
long_rain.gif	Precipitation-Compare
long_sun.gif	Sunshine-Compare
long_greenland.gif	Growing-Temperature-Compare
long_warmday.gif	Warm Days Compare
long_coldday.gif	Cold Days Compare
long_warmsum.gif	Thermal Sum Compare
long_coldsum.gif	Frost Sum Compare

**Mini-Graphics-Files: (only as single sensor graphics designated)**

Mini_currentx.gif	Current Mini-Graphics and single sensors ( <b>x</b> ) – look below
Mini_day?x.gif	Mini-Graphics for day 1-7 (?)and single sensors ( <b>x</b> ) – look below
Mini_wyyyy_wwx.gif	Mini-Graphics for year <b>yyyy</b> – week <b>ww</b> and single sensors ( <b>x</b> ) – look below
Mini_myyyyymmxx.gif	Mini-Graphics for year <b>yyyy</b> – month <b>mm</b> and single sensors ( <b>x</b> ) – look below
Mini_yyyyyx.gif	Mini-Graphics for year <b>yyyy</b> and single sensors ( <b>x</b> ) – look below

**Short cuts of the graphics filenames-enlargement for single sensors:**

<b>t,ti,t2-t15</b>	Temperature Outdoor, Temperature Indoor, Temperature 2 - 15
<b>h,hi,h2-h15</b>	Humidity Outdoor, Humidity Indoor, Humidity 2 - 15
<b>w,wg,wd,wc</b>	Wind speed, Wind Gust, Wind Direction, Wind Chill
<b>w10</b>	10 minutes average wind
<b>r</b>	Rain
<b>dp</b>	Dew Point
<b>m1-m4</b>	Soil Moisture 1 –4
<b>l1-l4</b>	Leaf Wetness1-4
<b>s</b>	Sun/Solar
<b>sl</b>	Sun Brightness
<b>st</b>	Sunshine time
<b>uv</b>	UV
<b>et</b>	Evapotranspiration
<b>xt</b>	Time Sensor
<b>rx</b>	ISS reception
<b>cl</b>	<b>Cloud low limit</b> –only available at day view
<b>b?</b>	Netatmo Battery: ? -> o=outdoor, 1..3=additional sensor 1..3, r=Rain, w=Wind
<b>c?</b>	Netatmo <b>Co2</b> : ? -> i=indoor, 1..3=additional sensor 1..3
<b>n</b>	Netatmo <b>Volume</b>

## Instruments Graphic-Files:

instr\_x.gif **x:t** (Outd. temp.), **h**(Outd. hum), **b**(Barometer), **r**(Rain), **dp**(dew point), **wc**(Wind chill), **w**(Wind), **wg**(Wind gust), **wd**(Wind direction), **uv**(UV-radiation)

yYYYYt .gif	Temperature-year-graphics	for example: 2000t.gif
yYYYYh .gif	Humidity-year-graphics	for example: y2000h.gif
yYYYYd .gif	Air pressure year-graphics	for example: y2000d.gif
yYYYYw .gif	Wind-year-graphics	for example: y2000w.gif
yYYYYwd .gif	Wind direction-year-graphics	for example: y2000wd.gif
yYYYYr .gif	Rain-year-graphics	for example: y2000r.gif
yYYYYdp .gif	Dew point year-graphics	for example: y2000dp.gif
yYYYYwc .gif	Wind chill-year-graphics	for example: y2000wc.gif
yYYYYs .gif	Sun year-graphics	for example: y2000s.gif
yYYYYb? .gif	Battery-year-graphics	for example: y2018b1.gif
yYYYYc? .gif	Co2-year-graphics	for example: y2018ci.gif
yYYYYn .gif	Volume year-graphics	for example: y2018n.gif

Ddis_yYYYY.gif	Wind distribution year graphic	for example: ddis_y2002.gif
ddis_f_yJJJJ.gif	Wind distribution year graphic	for example: ddis_f_y2002.gif
windbft_yJJJJ.gif	Wind distribution year graphic	for example: windbft_y2002.gif

mYYYYMM .gif	Collective-month-graphics	for example: m200001.gif
mYYYYMMt .gif	Temperature-month-graphics	for example: m200001t.gif
mYYYYMMh .gif	Humidity-month-graphics	for example: m200001h.gif
mYYYYMMd .gif	Air pressure month-graphics	for example: m200001d.gif
mYYYYMMw .gif	Wind-month-graphics	for example: m200001w.gif
mYYYYMMwd .gif	Wind direction-month-graphics	for example: m200001wd.gif
mYYYYMMr .gif	Rain-month-graphics	for example: m200001r.gif
mYYYYMMdp.gif	Dew point month – graphics	for example: m200001dp.gif
mYYYYMMwc.gif	Wind chill-month-graphics	for example: m200001wc.gif
mYYYYMMs .gif	Sun month-graphics	for example: m200001s.gif
mYYYYb? .gif	Battery-month-graphics	for example: m201801b1.gif
mYYYYc? .gif	Co2-month-graphics	for example: m201801ci.gif
mYYYYn .gif	Volume month-graphics	for example: m201801n.gif

Ddis_mYYYYMM.gif	Wind distribution month graphic	for example: ddis_m200202.gif
ddis_f_mYYYYMM.gif	Wind distribution month graphic	for example: ddis_f_m200202.gif
windbft_mYYYYMM .gif	Wind distribution month graphic	for example: windbft_m200202.gif

wYYYY_WW .gif	Collective-week-graphics	for example: w2000_02.gif
ddis_wJJJJ_WW.gif	Wind distribution week graphic	for example: ddis_w2002_05.gif
ddis_f_wJJJJ_WW.gif	Wind distribution week graphic	for example: ddis_f_w2002_05.gif
windbft_wJJJJ_WW .gif	Wind distribution week graphic	for example: windbft_w2002_05.gif

## Hardcopy-Graphics:

forecast.gif	Weather Forecast, Weather Forecast: double-click at "Forecasting"
forecasticons.gif	Weather Forecast, Graphics: double-click at sun-symbol above sunny
conditions_ajjjmmtt.gif	Weather conditon, Weather condition: double-click at Date/Time above
conditions1_ajjjmmtt.gif	Weather conditon, Values1: double-click at Date/Time above
conditions2_ajjjmmtt.gif	Weather conditon, Values2: double-click at Date/Time above
minmaxajjj_1.gif	Statistic Data, Temperature: double-click in table
minmaxajjj_2.gif	Statistic Data, Rain/ET/Wind/Sun: double-click in table
monthlongtime.gif	... above Button Save!
longtime.gif	Statistic Data, Long time values: double-click at "Recording"
longtimeyearyyyy.gif	Statistic Data for current year: double-click at "Recording"
longtimecalculated.gif	Statistic Data, computed: double-click in table
longtimesettings.gif	Statistic Data, Parameters: double-click at "year"
degreedaysajjj.gif	Degree Days, Values: doppelclick in table
sunmoon_1.gif	Sun/Moon, Data: double-click at moon graphic
sunmoon_2.gif	Sun/Moon, more ...: double-click at "next sun eclipse"
location.gif	Location: double-click at "Parameters"

status\*.gif

Hardcopy of the status windows, for example. **Status1\_VantagePro plus.gif**

The in this case created files are stored in the "Html" folder, except for a year specific graphics and the separation of years was chosen, so these files are stored into the corresponding "year folder"

**yyyy**=year, **mm**=month, **tt**=day

For the dummy parameters **yyyy**, **mm**, **tt** are used the corresponding current date dates for example **yyyy**=2003.

# Year-Data-Files

From release [V2.85.1](#) the program uses [year files](#) for the access on the [day values](#).

Since in this file also computed values (Rain time, sun time, point of condensation, windchill, abs humidity) are contained, you must carry, that at modification of the calculation arguments (for example other sensor for dew point, modification back into Relative Humidity and so forth), this file is updated corresponding. For the current month the program considers that automatically.

You can the use of the [year date files](#) under View, Adjustments deactivate!

With the first call (manual or automatic) of month or year view the program creates the additional [year date files](#) - according to the available data, so that can already last something. While creating first, all values of the day are used for the computing of the average [value](#), not, although prepared, only the values of 7:30, 14:30 and 2x 21:00.

If a [year file](#) is deleted and to use the option „[none Year-File](#)“ is not activated, this corresponding [year file](#) is generated again at viewing/using month and/or year.

Under Internet, Update Graphics/tables ... you have also the possibility to hold the content of the Year-Data-Files on current state.

### *Benefit of the Year-Data-Files:*

- The representation of the [year view](#) and also [month view](#) (here if the data are current) occurs just as quickly.
- Direct access over variables on the corresponding [day values](#) for all sensors.

## Caution!

As long as you experiment with certain parameters (for example [position of the sun correction factors](#) and so forth) you should deactivate the utilization of the [year files](#).

# Backup Data /- Restore

If you want to backup files and your storage area is sufficiently to the disposal, so it is the simplest, to backup the installation folder of WsWin (normally C:\Program\Wswin) and whose sub folders with all files.

The **absolutely necessary data** are the **monthly weather data files** (mm=month, yy=year)

- **ws\_mm\_yy.dat** ELV-Systeme
- **wm\_mm\_yy.dat** Huger WMR-Weather stations
- **wd\_mm\_yy.dat** DAVIS Weatherlink/VantagePro

Additionally, however, you should backup the **Settings files** as well - however not absolutely necessary, because of the file size, I nevertheless recommend the protection and one some spares itself at the restoration many "work."

- ❖ Wswin.cfg, Wswina.cfg
- ❖ Wsarchiv.mdb
- ❖ Template\*.txt
- ❖ All own Html-/WML-file (ticker.txt, custom.txt, wap.txt, ws\_speech\*.txt, ...)
  
- Ws\_hist.txt
- Ws\_ddays.txt

One can again generates all graphics/Html files etc. from these files.

If you made a backup to a CD-ROM and would like to "restore" these again, so you necessarily remove the **RO - attribute (write protection)** of these files.

The program doesn't accept as well as doesn't ignore "write-protected files" without hint!

## Switch weather station

If you change the weather-station, and it is used another monthly-data format with it, for example transferred of WS2500 (**ws\_mm\_yy.dat**) on VantagePro (**wd\_mm\_yy.dat**), so you can under [File, Exporting ...](#), [Export all month files ...](#), [Data files](#) your entire data inventory export and after rearranging on the new station under [File, Weather date import](#) all your data again imports.

**Another possibility is:**

[File, Exporting...](#) , [Export weather data](#) and here at Meas. items select the Option **"Export all month files: 1 File"**

If the monthly-data format „**w?\_\*.dat**“ (same data file-format) remains same, you need only on the new weather-station rearranges.

[Functions](#)

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# Update WsWin – make program update

... this is relevant only for the the registered users. ;)

There are two ways of bringing the program on the current stand:

- 1) Download from the protected [user area](#) (access [data](#) necessary) the complete version with a size of at least 7 MBs and install the program in the same directory, where already a previous version was installed. Usually in this case, no user specific files are overwritten
- 2) Download the individual update Exe- file from the PRG-directory (also protected user area) - for example **update\_wswin32\_29511.exe** - you find the link for this purpose also under „Help“, „Info over...“ (provided that you do not know the Download link anymore). Starting this EXE-file makes the update.

If the Update program should you informs, that your pre-version is to OLD for an Update, you must use the complete-version for updating!

A reason for it can also be, that you want to execute the Update in another folder as the pre-version!

The Update- file **update\_wswin32ns\_?????.exe** must be always used (and only then!), if you want to use (additional to the complete-version) the version without speech support!

Method 2) you generally should take into consideration, especially with download - problems. Especially only here, you can find the always newest version.

Sometimes, you find Updates also in the test folder (subdirectory of PRG). Here lies only beta - versions or versions for with no description, which actually would be necessary.

The registered users should find an INFO\_R.TXT also in the Wswin-program-folder, if not, you can it also download from the PRG folder - continuing information exists here.

## User data lost/forgets:

Who hast lost/forgot this Access data, necessarily should with the request its

**Address in email**

Without the address, it is very likely that you get as answer "I require your address for verification" or expressed differently, if I don't know your address, you don't get any more access to Updates.

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## Wswin\_TE923usb.cmd

Normally this program is controlled by Wswin, with two exceptions:

- 1) Start with "command line" parameter **test**
  - This shows the program what it would do with a TE923 station, but does not make any changes.
- 2) Start as stand-alone program without command line parameter and file wswin\_usbsid.txt exists and in it is an entry which USB\_ID (key) should be changed - similar to the changes as for a TE923 station. USB ID entries as in a TE923 station are not supported!

### Prerequisite for use:

- >> Confirmation of user account control (running as an administrator) is essential!
- >> This help program may be identified as a virus and / or pollutant program, then  
You must trust the program or exclude from review.
- >> After successful modification in the registry a reboot of the computer is carried out (only TE923)!

### Contents

# Technical Data

ELV WS2000-PC – WS2000 / WS2500 / Weather-Sensor/ WMR-918 / WM-918

## WS2000-PC – WS2000

The following list is an overview of the technical data for WS2000 Weather Station / PC wireless interface.

Measuring interval outdoor sensor	3 min
Measuring interval indoor sensor	3 min
Transmitter frequency	433,92 MHz
Range in the free field	a maximum of. 100 m (330 ft)
<b>Temperature range indoors</b>	0 °C to +80 °C (+32 °F to +176 °F)
<b>Temperature range outdoors</b>	-30,0 °C to +70 °C (-22 °F to +176 °F)
Resolution	0,1 °C (0,1 °F)
Accuracy	±1 °C (± °F)
<b>Measuring range of relative humidity</b>	20% - 95 %
Resolution	1%
Accuracy	8%
<b>Measuring range air pressure</b>	800 to 1100 hPa (23,62 to 32,48 inHg)
Resolution	1 hPa (0,03 inHg)
Accuracy	±1 hPa (±0,03 inHg)
<b>Air pressure modification</b>	Waveform, 2 hPa/1,5 mmHg per tick
<b>Rain amount</b>	0 to 3999/9999 mm (0 to 393 in)
Resolution	< 0,5 mm (<0,03 in)
Accuracy	2 % ±1 mm (2 % ±0,04 in)
<b>Wind speed</b>	0-200 kph. (0 –124 mph)
Resolution	0,1 kph. (0,1 mph)
Accuracy	3 % ±1 km/h (3 % ±0,6 km/h)
<b>Wind direction</b>	graphic solution 22,5 °, numeric solution 5 °
Voltage supply	4 size "AA" batteries (Alkaline ones)
Dimensions WS2000 (W x H x D)	217 x 160 x 30 mm
PC wireless interface voltage supply	2 size "AA" batteries (Alkaline ones)
Dimensions PC interface (W x H x D)	100 x 70 x 24 mm
Connecting cable (V24)	length approx. 1,4 m

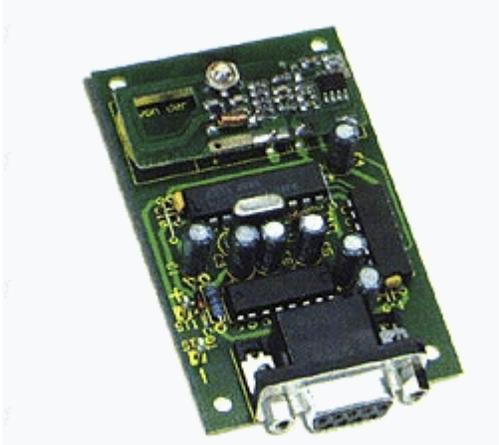
## WS2500-PC – WS2500

The following list is an overview of the technical data for WS2500 Weather Station / PC wireless interface.

Measuring interval outdoor sensor	3 min
Measuring interval indoor sensor	3 min
Transmitter frequency	433,92 MHz
Range in the free field	a maximum of. 100 m (330 ft)
<b>Temperature range indoors</b>	-30,0 °C to +70 °C (-22 °F to +176 °F)
<b>Temperature range outdoors</b>	-30,0 °C to +70 °C (-22 °F to +176 °F)
Resolution	0,1 °C (0,1 °F)
Accuracy	±1 °C (± °F)
<b>Measuring range of relative humidity</b>	20% - 95 %
Resolution	1%
Accuracy	8%
<b>Measuring range air pressure</b>	800 to 1100 hPa (23,62 to 32,48 inHg)
Resolution	1 hPa (0,03 inHg)
Accuracy	±1 hPa (±0,03 inHg)
<b>Air pressure modification</b>	Waveform, 2 hPa/1,5 mmHg per tick
<b>Rain amount</b>	0 to 3999/9999 mm (0 to 393 in)
Resolution	< 0,5 mm (<0,03 in)
Accuracy	2 % ±1 mm (2 % ±0,04 in)
<b>Wind speed</b>	0-160 kph. (0 –100 mph)
Resolution	0,1 kph. (0,1 mph)
Accuracy	3 % ±1 km/h (3 % ±0,6 km/h)
<b>Wind direction</b>	graphic solution 22,5 °, numeric solution 5 °
<b>Sun Brightness</b>	0 to 200000 lux
Resolution	to 1klux: <b>1 lux</b> , to 10klux: <b>10 lux</b> , to/from 100klux: <b>0,1 klux/1 klux</b>
Accuracy	±10 % - 4 Digit
<b>Sunshine duration</b>	0 to 9999 h
Resolution	to 100h: <b>1 min</b> , to 999h: <b>1/10 h</b> , from 1000h: <b>1 h</b>
Voltage supply	4 size "C,R/4" batteries (Alkaline ones) Plug-in power supply 9V/500mA
Dimensions WS2500 (W x H x D)	255 x 210 x 35 mm
PC wireless interface voltage supply	2 size "AA" batteries (Alkaline ones)
Dimensions PC interface (W x H x D)	100 x 70 x 24 mm
Connecting cable (V24) length	approx. 1,4 m

## PC-Weather-Sensor-Receiver

Kit from ELV (Germany) – Order.Num. 68-390-61



The small recipient for the signals of the **ELV Weather Sensor System** (and **OEM's**) and the remote control **FS10** (ELV Wireless controlling-system) is used for the receive control of the date transmitter and as a general recipient for own applications (for example Wswin). The received data are dumped over a serial RS-232-Interface onto the PC.

## Technical Data

<b>Complete kit</b>	
<b>Power supply</b>	5 V, stabilized
<b>Current drain</b>	approx. 20 mA
<b>Receive frequency</b>	433,92 MHz
<b>Interface</b>	RS 232
<b>Dimensions</b>	79 x 48 x 15 mm

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## WMR-918H

Please note, that the sensors of the successor device **WMR-918N=WMR-968** do not work with the old WMR-918 (except for addition sensors THGR 228).  
The technical data are identical - except for air pressure (inside sensor).

The following list is an overview of the technical data for  
Huger/OSI Weather Station WMR-918H (Wireless version)

Transmitter Frequency	433 MHz
<b>Indoor-sensor: (BTHR918)</b>	
Measuring range temperature	-5 °C to +50 °C
Resolution temperature	0,1°C
Measuring range relative humidity	25 % to 90 %
Resolution relative humidity	1 %
Measuring range barometric air pressure	795 to 1050 mbar
Measuring range barometric air pressure (BTHR918N)	600 to 1050 mbar
Resolution barometric air pressure	1 mbar
Data transfer cycle	38 s
Range in the free field	a maximum of. 30 m
<b>Outdoor-sensor: (THGR918)</b>	
Measuring range temperature	-20 °C to +60 °C
Resolution temperature	0,1°C
Measuring range relative humidity	25 % to 90 %
Resolution relative humidity	1 %
Data transfer cycle	37 s
Range in the free field	a maximum of. 100 m
<b>Additional sensors (THGR 228 H):</b>	
Measuring range temperature	-20 °C to +60 °C
Resolution temperature	0,1°C
Measuring range relative humidity	25 % to 90 %
Resolution relative humidity	1 %
Data transfer cycle Channel1	39 s
Data transfer cycle Channel2	41 s
Data transfer cycle Channel3	43 s
Range in the free field	a maximum of. 30 m
<b>Wind sensor (WGR918):</b>	
Measuring range wind speed	0 kph. to 200 kph.
Resolution wind speed	0,72 kph.
Measuring range wind direction	0 ° to 359 °
Resolution wind direction	1 °
Data transfer cycle	14 s
Range in the free field	a maximum of. 100 m
<b>Rain-sensor (PCR918):</b>	
Measuring range rain sensor	0 to 9999 mm
Measuring range rainfall rate	0 to 999 mm/h
Resolution rainfall	1 mm
Resolution rainfall rate	1 mm/h
Data transfer cycle	47 s
Range in the free field	a maximum of. 100 m
Voltage supply	4 size "AA" batteries (Alkaline) & power unit 12V
Dimensions (L x W x H)	204 x 139 x 39 mm

## WM-918

The following list is a overview of the technical data for Huger/OSI Weather Station WM-918 (Cable version)

### Indoor-sensor: (built-in into display)

Measuring range temperature	0 °C to +50 °C
Resolution temperature	0,1°C
Measuring sampling cycle temperature	10 s
Measuring range relative humidity	10 % to 97 %
Resolution relative humidity	1 %
Measuring sampling cycle relative humidity	10 s
Measuring range barometric air pressure	795 to 1050 mbar
Solution barometric air pressure	1 mbar
Measuring sampling cycle barometer	15 min
Measuring cycle barometer trend	60 min

### Outdoor-sensor: (cable)

Measuring range temperature	-40 °C to +60 °C
Resolution temperature	0,1°C
Measuring sampling cycle temperature	10 s
Measuring range relative humidity	25 % to 90 %
Resolution relative humidity	1 %
Measuring sampling cycle relative humidity	10 s

### Wind-sensor (cable):

Measuring range wind speed	(0-56 m/s) 0 k.p.h. to 200 k.p.h.
Resolution wind rate	(0,2 m/s) 0,72 k.p.h.
Measuring sampling cycle wind gust	5 s
Measuring sampling cycle wind speed normal	60 s
Measuring range wind direction	0 ° to 359 °
Resolution wind direction	1 °
Measuring sampling cycle wind direction	5 s

### Rain-sensor (Cord):

Measuring range rain sensor	0 to 9999 mm
Measuring range precipitation rate	0 to 998 mm/h
Resolution rainfall	1 mm
Resolution rainfall rate	1 mm/h
Measuring cycle cumulative	24 hours

### Data transfer cycle (to personal computer):

General, wind, wind chill	5 s
Rain	10 s
Air pressure, dew point	10 s
Temperature	10 s
Humidity	10 s

Voltage supply	8 size "AAA" bateried (Alkaline) & power unit 12V
Dimensions (L x W x H x)	178 x 108 x 43 mm

### Contents

## VantagePro/VantagePro2 (plus)

If there exist additionally an UV and solar radiation sensor at this station, it is called "plus."

The following installation delivers an overview over the specifications of this DAVIS weather station VantagePro (wireless version) - and European version.

The reach of the wireless sensors amounts maximum to 120 m (400 ft) with ideal conditions.

Transmit/Receive Frequency 868,35 MHz

### Sensors in Console

Effective range **Inside-Temperature** 0 °C to +60 °C

Resolution Temperature 0,1°C

[Update Interval Inside Temperature](#) 60 sec

Effective range **relative Indoor-Humidity** 10 % to 90 %

Resolution relative Humidity 1 %

[Update Interval Inside Humidity](#) 60 sec

Effective range **barometric Pressure** 880 to 1080 mbar

Resolution barometric Pressure 0,1 mbar

(allowed Elevation from -305 to 3810m)

[Update Interval barometric Pressure](#) 15 min

### Outside-Sensor: (ISS)

Effective range **Temperature** -40 °C to +65 °C

Resolution Temperature 0,1°C

[Update Interval Temperature](#) 10-12 sec

Effective range **relative Humidity** 1 % to 100 %

Resolution relative Humidity 1 %

[Update Interval Humidity](#) 50-60 sec

### Extra-Sensor (6380/6385/6470):

Effective range **Temperature** -40 °C to +65 °C

Resolution Temperature (1°F) 0,555°C

[Update Interval Temperature](#) 10-12 sec

[Update Interval Temperature in Leaf Wetness/Soil Moisture St.](#) 40-48 sec

Effective range **relative Humidity** 0 % to 100 %

Resolution relative Humidity 1 %

[Update Interval Humidity](#) 50-60 sec

### Wind-Sensor (7911):

Effective range Wind Speed (large wind cups) 1,6 km/h to 193 km/h

Effective range Wind Speed (small windcups) 5 km/h to 282 km/h

Resolution Wind Speed 0,5m/s 1,6 km/h

Effective range Wind Direction 0 ° to 360 °

Resolution Wind Direction 1 °

[Update Interval](#) 2,5-3 sec

### Rain-Sensor (7852):

Effective range Rain Sensor 0 to 19.999 mm

Effective range Rain Rate 0 to 2.540 mm/h

Resolution (at 0.01 in Sensor) 0,254 mm

[Update Interval](#) 10-12 sec

### Leaf-Wetness-Sensor (6420):

Effective range Leaf 0 to 15

Resolution 1

[Update Interval Leaf-Wetness](#) 60 sec

### Soil Moisture-Sensor (6440):

Effective range Soil Moisture 0 to 200 cb

Resolution 1 cb

[Update Interval Soil Moisture](#) 62,5 - 75 sec

### UV-Sensor (6490):

Effective range UV-Sensor (Indece) 0 to 16

Resolution 0,1 UV-Index

[Update Interval](#) 50-60 sec (5 min if dark)

### Solar Radiation-Sensor (6450):

Effective range Solar 0 to 1800 W/m<sup>2</sup>

Resolution 1 W/m<sup>2</sup>

[Update Interval](#) 50-60 sec (5 min wenn dunkel)

Power supply 3 C-Cells  
& AC Power Adapter 4-12V(5V –200mA)  
Dimensions (L x W x D) 264 x 156 x 48 mm

**Reception quality** – for the calculation the wind sensor is used:  
With 5 minutes of storage interval are 114 measurements 100 %  
With 1 minutes of storage interval are 23 measurements 100 %

## Differences between VantagePro and VantagePro2

Transmission interval of the data:  
VantagePro with ID1 2,500 sec  
VantagePro2 with ID1 2,625 sec

Advantage:  
The VantagePro2 uses frequency hopping spread spectrum radio technology and reaches for transmit or receive data in line of sight 1000 ft or 300 m

Disadvantage:  
Who puts in the station as pure station without computer-binding,  
Has no more access to the data from  
maximum Solar value, maximum UV value, maximum Leaf value, maximum Soil value and lowest Soil value of the last 24 months.

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# TE923/TE923W/Pro-X

Receiver (Supply=6.0V, Ta=23°C) and Sensor unit (Supply=3.0V, Ta=23°C)

RF Transmission Frequency 434 MHz  
RF Reception Range 100 meters Maximum ( Line of Sight )  
Operating Temperature -5°C to 50°C ( 23°F to 122°F)  
Storage Temperature -20°C to 70°C ( -4°F to 158°F)

## **Barometric Pressure Range** (At sea level )

500 hpa to 1100hpa  
( 14.75 inHg to 32.44 inHg )  
( 374.5 mmHg to 823.8 mmHg )

Altitude Compensation Range

-200m to +5000 m  
( -657 ft to 16404 ft )

Barometric Pressure resolution

0.1 hpa ( 0.003 inHg, 0.08 mmHg )

Barometric Pressure accuracy

+/- 5 hpa ( 0.15 inHg, 3.8 mmHg )

## **Outdoor Temperature Display Range**

-40°C to 80°C ( -40°F to 176°F )

## **Indoor Temperature Display Range**

-9.9°C to 60°C ( 14.2°F to 140°F)

Temperature accuracy

+/- 1°C or +/- 2°F

Temperature resolution

0.1°C or 0.2°F

Humidity Display Range

1% to 99%

Humidity accuracy

+/-5%

Humidity resolution

1%

[Temperature Sensing Cycle \(indoor\)](#)

10s

[Humidity Sensing Cycle \(indoor\)](#)

10s

[Receiving Cycle Remote Thermo./Hygro](#)

around 47s

Sunrise and Sunset Accuracy

+/- 3min ( latitude within +/- 50° )

## **UV range**

0.0 UVI to 36UVI (15.4 MED/hour)

UV resolution

0.1UVI ( 0.1 MED/h )

UV Accuracy

+/-1UVI + 10%

[Receiving Cycle Remote UV sensor](#)

300s

## **Wind**

Wind Direction Range

16 positions

Wind Direction Accuracy

+/-11.25°

Wind Direction Resolution

22.5°

Wind Direction Starting Threshold

3mph

Wind Speed Range

0 to 199.9mph

(199.9 Km/h, 173.7 Knots, 89.3 m/s)

Wind Speed Accuracy

+/- ( 2mph + 5% )

Wind Speed Starting Threshold

3mph

Wind/Gust Speed Display Update Interval

33 seconds

Wind/Gust Sampling Interval

11 seconds

[Receiving Cycle Remote Wind sensor](#)

33s

## **Rain**

1h/24h/yesterday Rainfall Range

0.0 to 1999.9 mm ( 78.73 inch )

Last week/ last month Rainfall Range

0 to 19999 mm ( 787.3 inch )

Rainfall Accuracy

+/-5% plus +/-0.8mm (0.03 inch)

[Receiving Cycle Remote Rain gauge](#)

183s

[Contents](#)

# Range

The free field range, that is the range with visual contact between sender and receiver of the Weather Station, is under optimal conditions 100 m (330 ft). Walls and even reinforced concrete constructions can be passed through, but they do affect the range correspondingly.

A reduced range may be due to the following reasons:

- Radio-frequency interferences of all kind
- Buildings of all types and vegetation
- Transmitter and receiver clearance from conductive surfaces or objects which affect radiation characteristics and thus the range (including human bodies and the ground)
- Broadband interference in built-up areas may reach levels which lessen the entire signal to noise ratio, thus reducing the range.
- Units with neighbouring operating frequencies may affect the receiver.
- Poorly screened PCs may affect the receiver and reduce the frequency.

[Faults](#)

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# Eliminating Faults

If no more data are received from a sensor over a period of an hour, its value disappears from the display automatically. All 12 hours the basis device checks which sensors are available if the alignment was disturbed by a temporary hop trouble between sensor and basis device. The transmission of the data occurs in a very short period of time. After this period any faulty reception should be resumed.

An again connected radio sensor (for example after battery change) is recognized by the system automatically. The corresponding data are announced then in the display of the receiver.

Frequently faults occur only temporarily (for example with Radio Voice Communication) or can be eliminated very simple. For example if some radio headphones are used in your house or in the neighborhood, a radio sitter or a similar device is working on the frequency 433 MHz, their on time is mostly temporary. As a rule these devices allow a change to a frequency where the system works without faults. Through that the troubles can be stopped.

Possible faults which can prevent a correct display of the transmitted measured values are:

## **Undefined values after the initiation**

Note that the basis device must be put into operation after the wireless sensors, so that immediately defined data can be received and an assignment of the sensors to the addressable points in the display is possible.

## **No reception**

The distance between the sender and the receiver should be reduced in case of troubles.

## **No reception**

Materials screening strongly are between senders and receivers (thick walls, reinforced concrete etc.). Search for other position for senders or receivers.

## **Sender is overlaid from interference source**

Eliminate interference source (radio equipment, radio headphones, radio loudspeaker etc.) or search for other position for senders and receivers. If no data transfer was accomplished after 30 minutes, the corresponding point of measurement is disconnected, no measured values are announced any more since the system does not start from a sensor no longer available. No further reception attempts are started in order not to empty the battery to fast. After an interference of 12 hours the receiver starts an independent resynchronisation.

## **Radio sensor disturbs other devices in the 433 MHz field**

Other devices working on the same channel can disturb the sending of the radio outdoor sensor (every 3 min for approx. 200 ms). These faults are only very short-term and can be neglected as a rule. If possible, another channel should be chosen however at the faulty device.

## **Many interferences**

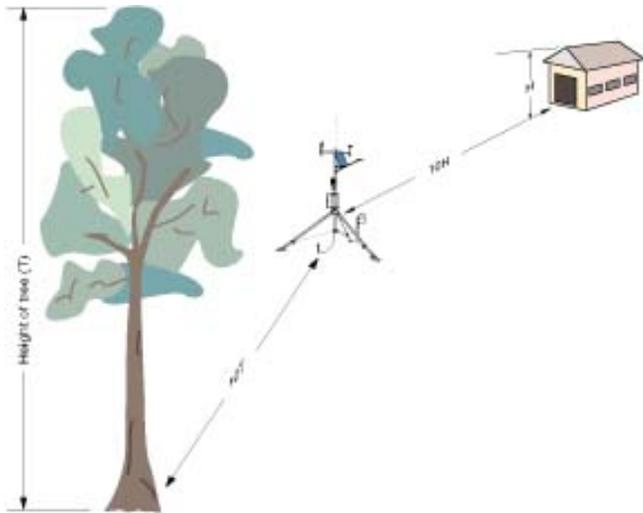
If many faults are shown after the read-out of the wireless interface, an almost empty battery in the PC wireless - interface can be the cause for that.

The available flag "Battery LOW" is unused.

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# Suggested Measurement Heights



## Suggested Measurement Heights and Exposure

Sensor Type	Measurement Height or Depth	Exposure Considerations
Wind	<b>3 m ± 0.1 m</b> recommended (AASC) <b>2 m ± 0.1 m, 10 m ± 0.5 m</b> , optional (AASC) <b>10 m</b> (WMO & EPA)	No closer than ten times the obstruction's height
Air Temperature & Relative Humidity	<b>1.5 m ± 1 m</b> (AASC) <b>1.25-2.0 m</b> (WMO) <b>2.0 m</b> for temperature only (EPA) <b>2 m &amp; 10 m</b> for temperature difference (EPA)	The sensor must be housed in a ventilated radiation shield to protect the sensor from thermal radiation. The EPA recommends the sensor be no closer than four times the obstruction's height and at least 30 m from large paved areas.
Solar Radiation	Height should be consistent with the exposure standard (AASC, WMO, EPA). To facilitate leveling/cleaning, CSI recommends installing at a height of <b>3 m</b> or less.	The sky should not be blocked by any surrounding object. However, objects <math>< 10^\circ</math> above the horizontal plane of the sensor are allowed.
Precipitation	<b>1.0 m ± 0.2 m</b> (AASC) <b>30 cm</b> minimum (WMO)	AASC & EPA suggest the sensor be no closer than four times the obstruction's height. The orifice of the gage must be in a horizontal plane, open to the sky, and above the level of in-splashing and snow accumulation.
Soil Temperature	<b>10 cm ± 1.0 cm</b> (AASC)	Measurement site should be 1

	<b>5 cm, 10 cm, 20 cm, 50 cm, 100 cm (WMO)</b>	m <sup>2</sup> and typical of the surface of interest. The ground surface should be level with respect to the immediate (10 m radius) area.
-----	-----	-----

## References

*The State Climatologist* (1985) Publication of the American Association of State Climatologists: Heights and Exposure Standards for Sensors on Automated Weather Stations, v. 9, No. 4 October, 1985.

EPA (1987). On-Site Meteorological Program Guidance for Regulatory Modeling Applications, EPA-450/4-87-013. Office of Air Quality Planning and Standards, Research Triangle Parks, North Carolina 27711.

WMO (1983). Guide to Meteorological Instruments and Methods of Observation. World Meteorological Organization No. 8, 5th edition, Geneva Switzerland.

Tanner, Bertrand D. (1990). Automated Weather Stations, *Remote Sensing Reviews*, 1990, Vol. 5 (1), p.73-98.

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# Special Terms

## DCF-77

- DCF-77 is a time signal transmitter which works in the long-wave field and has a range of approx. 1500 km. Location is Mainflingen near Frankfurt / Main. The sender sends out a time signal, that is supplied by the "Physikalisch-Technischen-Anstalt" (PTA) at Braunschweig as so-called atomic time and shows a time deviation of less than 1 s in 1 Mio. years. Astronomically caused time corrections, leap years and date changes are considered in the time telegram automatically.

## Felt temperature

- see wind chill

## Air pressure history

- Saving and graphic display of the air pressure process of the last 24 hours. With that you can draw conclusions as to the general weather evolution. The graphic display is done at the Weather Station WS200 with a tick at a modification of 2 hPa.

## Air pressure tendency

- Calculated from the evolution of the air pressure values of the last hours.

Rapidly rising or falling

pressure change > 3hPa

Falling or Rising

pressure change  $\geq 1$ hPa – 3hPa

Steady

pressure change < 1hPa

## Dew point

- Temperature point which is dependent on the concurrence of a specific air pressure, a specific temperature and a specific air humidity. At this temperature point the condensation of the air humidity begins, the so-called formation of condensation, the humidity condenses and becomes a liquid. So the point of condensation for air is for example at 20 °C and 17,4 g/m<sup>3</sup> of steam. If the point of condensation is under 0 °C for steam, the condensation occurs as snow or hoar.

## Weather tendency

- Forecast display with weather symbols, calculated from the gradient of rise or fall of the air pressure.

## Wind chill-temperature (Felt temperature)

- An ostensible temperature which is felt by the human being under specific conditions instead of the measured temperature and which is frequently used for the description of low temperatures. As conditions for that a temperature under 33°C (91°F) and a wind rate of about 6,4 k.p.h (1.7 m/s – 4 mph). are defined. Wind chill corresponds to the cooling effect of an undressed skin at a supposed constant body temperature of 33°C. The "Felt temperature" is approximately comparable with the so-called felt temperature, which additionally considers the radiation action of the sun, the light reflection of the clouds and the optical wavelength.

## New Wind chill calculation:

This is based on the "New Wind Chill Temperature Index of National Weather Service (NWS) - USA and Meteorological Services of Canada (MSC)". As conditions for that a temperature under 51°F (11°C) and a wind rate of about 3 mph (4.5 k.p.h). are defined.

## PMV – Predicted Mean Vote – Index for personal good feel

Behind this value conceals itself under < 5°C the felt temperature.(windchill).

From 5°C this value is determined with an empirical procedure under inclusion of the wind rate, the temperature and the dew point as a measure of the air humidity. (In the room the wind component is dropped).

*Here no consideration of the coverage at clouds occurs*

Reference for it: E. King (Medizin-Meteorologische Hefte Nr. 10, 1955) und R. Knepple (Zeitschrift für Meteorologie Nr. 2, 1948)

The determined values (announced in bracket) are moved onto the PMV-index:

**PMV-Index**      **Felt Temp.(°C) and/or**      **Physiological Effect**

## empirical value

<-3	<= -26	extreme cold stress
-3	-25...-16	high cold stress
-2	-15...-10	moderate cold stress
-1	-10...+ 4	light cold stress
0	+ 5...+ 9	no stress
+1	+10..+15	light thermal stress
+2	+16..+25	moderate thermal stress
+3	+26..+35	high thermal stress
>+3	>= +36	extreme thermal stress

## Heat index

The heat index or also temperature/humidity index (T-H index) state how we feel the temperature warmly currently. The decisive size for this measured value supplies in this case the humidity. The heat index is only relevant from temperatures  $\geq 26,7^{\circ}\text{C} / 80^{\circ}\text{F}$  (with other calculation methods  $> +14^{\circ}\text{C}/57^{\circ}\text{F}$  - for example VantagePro). The Heat Index uses the temperature and the relative humidity to determine how hot the air actually „feels“. When humidity is low, the apparent temperature will be lower than the air temperature, since perspiration evaporates rapidly to cool the body. However when humidity is high, (i.e., the air is saturated with water vapor) the apparent temperature „feels“ higher than the actual air temperature, because perspiration evaporates more slowly. The heat index is an indicator as we can „load“ our body in the respective weather situation. The heat index is used mainly for high temperatures to the determination of the „stress“ in the afternoon.

## Summer Simmer Index

The Summer Simmer Index is another calculation method of the "heat index" for during overnight lower temperatures (with temperatures on high level)

## Virtual Temperature

Virtual temperature is a fictitious temperature that takes into account moisture in the air. The formal definition of virtual temperature is the temperature that dry air would have if its pressure and specific volume were equal to those of a given sample of moist air. Virtual temperature allows meteorologists to use the equation of state for dry air even though moisture is present.

## Wet bulb

Is the lowest temperature that can be obtained by evaporating water into the air at constant pressure. The name comes from the technique of putting a wet cloth over the bulb of a mercury thermometer and then blowing air over the cloth until the water evaporates. Since evaporation takes up heat, the thermometer will cool to a lower temperature than a thermometer with a dry bulb at the same time and place

## Mixing Ratio

The mass of water vapor in a parcel divided by the mass of the dry air in the parcel (not including water vapor). Is indicated in **g/kg**.

- **saturated:** that one is the maximal possible Mixing Ratio content with the corresponding temperature (100% relative humidity).

## Vapor Pressure

**Actual:** Is the pressure exerted by the water vapor present in a parcel. Water in a gaseous state (i.e. water vapor) exerts a pressure like the atmospheric air. Vapor pressure is also measured in millibars.

**Saturated:** The maximum partial pressure that water vapor molecules would exert, if the air were saturated with vapor at a given temperature. Saturation vapor pressure is directly proportional to the temperature.

## Altimeter Pressure (Air pressure)

(= relative air pressure = air pressure). Is the air pressure reduced to sea level (NN/Sealevel). Measured by air pressure dates necessarily for the arrangement at variously location altitudes.

**Stations air pressure + adjustment value = air pressure**

For calculation of these adjustment value's there gives variously precise procedures.

The simplest means is the sum with fixed value's, that is from the station height is won, for example.

**Adjustment value = Location altitude/8.5**

The most precise means considers also the influence of the temperature !

## Station Pressure

Air pressure designated also as absolute pressure which is measured at the station location. On 0 m about NN the Stations pressure is like the Altimeter pressure.

## Pressure Altitude

The standard measure air pressure on **0 m** measurement height is defined with **1013,25 hPa**.

The higher the measurement height becomes, all the more lower the air pressure becomes.

for example on **110 m** the air pressure is then only **1000 hPa**

the whole considered without any influences (Temperature, humidity and so on)

## Wind Run

Determined at a specific place, the wind run represents the possible energy gain for the importance of wind power plants or windmills.

The wind run indicates in this case the amount at air which is put through over a specific period at the point of measurement. Every occurred wind rate is integrated in this case together with the space of time of their occurrence over a period.

Calculation example:

We accept the wind long blows with an unchangeable rate from 15 k.p.h. and 20 hours, so that shows a **wind run** of **(25 k.p.h.) x Time/24h (20/24h) = 20,83 km**

And further in the assumption: that in a month with 30 days and on every day with this value, so that shows a month wind run of **625 km** (20,83x30) - [and/or in fact 15 000 km]

The program computes the wind run with reference to 24 hours, because of the better comparability with the rain values and the sunshine times ! **Who would like to have the absolute value, can multiply the value by 24** (in order to compare with other programs)

## Solar & Sun radiation

Mentioned the electro-magnetic part of the radiation spectrum of our sun, or also global solar radiation and a value is for the service gain. It is measured in Watt/qcm (W/m<sup>2</sup>). 1 W/m<sup>2</sup> corresponds to an equivalent of 0.143 kcal/min.

The solar or sun energy is measured in Langley (Ly). 1 Langley corresponds to a Gramm gram calorie/cm<sup>2</sup>. This is that energy amount who is needed in order to warm up 1 gram water around 1°C is a gram-calorie.

## UV-Spectrum and UV-Dose (MED)

The ultraviolet-spectrum is the ultra-violet field of the light. It begins at the boundary of the visible light and reaches to in the area of long-wave X-radiation (4-400nm).

MED – stands for Minimum Erythema Dose, defined as the amount of sunlight exposure necessary to induce a barely perceptible redness of the skin within 24 hours after sun exposure.

In this case, Sunburn is the most frequent appearance.

### Classification according to Fitzpatrick

*Index-Values Exposure Category*

0 bis 2	Minimal
3 bis 4	Low
5 bis 6	Moderate
7 bis 9	High
> 10	Very High

## EvapoTranspiration (ET)

ET is a measurement of the amount of water vapor returned to the air in a given area. It combines the amount of

water vapor returned through evaporation (from wet vegetation surfaces and the stoma of leaves) with the amount of water vapor returned through transpiration (exhaling of moisture through plant skin) to arrive at a total. Effectively, ET is the opposite of rainfall, and it is expressed in the same units of measure (Inches, Millimeters).

## Density Altitude (- for pilots)

The idea of density altitude begins with the standard atmosphere table, a table of air temperature, pressure and density at various altitudes. The actual values of all of these change with the weather. But, the standard atmosphere figures can be used to calculate for various altitudes how much lift a wing should produce, how much power will come from the engine or engines and how much thrust will push the aircraft along and how much drag should be produced. Pilots need to adjust these theoretical values of lift, power and thrust to take account of differences between the standard atmosphere and the real atmosphere at a particular time and place. They use charts or aviation computers to say that the real atmosphere at a particular time has the density of the standard atmosphere at a certain altitude, which is likely to be different from the true altitude. The aircraft performs as though it were at the density altitude. To see how this works, look at our standard atmosphere table. Imagine that you have some kind of device that directly measures the air's density. Imagine that this device tells you the air's density is 0.001812 slugs per cubic foot. You'd find that figure on the chart and then see that it's the density at 9,000 feet in the standard atmosphere. We'd say that the aircraft was at a density altitude of 9,000 feet, no matter what true altitude it's at.

## Standard Atmosphere Table

Altitude (m)	Temperature (°C)	Pressure (hPa)	Density (kg/m <sup>3</sup> )
0000	15,0	1013	1,2
1000	8,5	900	1,1
2000	2,0	800	1,0
3000	-4,5	700	0,91
4000	-11,0	620	0,82
5000	-17,5	540	0,74
6000	-24,0	470	0,66
7000	-30,5	410	0,59
8000	-37,0	360	0,53
9000	-43,5	310	0,47
10000	-50,0	260	0,41
11000	-56,5	230	0,36
12000	-56,5	190	0,31
13000	-56,5	170	0,27
14000	-56,5	140	0,23
15000	-56,5	120	0,19
16000	-56,5	100	0,17
17000	-56,5	90	0,14
18000	-56,5	75	0,12
19000	-56,5	65	0,10
20000	-56,5	55	0,088
21000	-55,5	47	0,075
22000	-54,5	40	0,064
23000	-53,5	34	0,054
24000	-52,5	29	0,046
25000	-51,5	25	0,039
26000	-50,5	22	0,034
27000	-49,5	18	0,029
28000	-48,5	16	0,025
29000	-47,5	14	0,021
30000	-46,5	12	0,018
31000	-45,5	10	0,015
32000	-44,5	8,7	0,013
33000	-41,7	7,5	0,011
34000	-38,9	6,5	0,0096
35000	-36,1	5,6	0,0082

## U.S. Units – Standard Atmosphere Table

Altitude (ft)	Temp. (°F.)	Pressure (inHg)	Density- slugs/ft <sup>3</sup>
0	59.0	29.92	0.002378
1,000	55.4	28.86	0.002309
2,000	51.9	27.82	0.002242
3,000	48.3	26.82	0.002176
4,000	44.7	25.84	0.002112
5,000	41.2	24.89	0.002049
6,000	37.6	23.98	0.001988
7,000	34.0	23.09	0.001928
8,000	30.5	22.22	0.001869
9,000	26.9	21.38	0.001812
10,000	23.3	20.57	0.001756
11,000	19.8	19.79	0.001701
12,000	16.2	19.02	0.001648
13,000	12.6	18.29	0.001596
14,000	9.1	17.57	0.001545
15,000	5.5	16.88	0.001496
16,000	1.9	16.21	0.001448
17,000	-1.6	15.56	0.001401
18,000	-5.2	14.94	0.001355
19,000	-8.8	14.33	0.001310
20,000	-12.3	13.74	0.001267
25,000	-30.15	11.10	
30,000	-47.98	8.89	
35,000	-68.72	7.04	
40,000	-69.70	5.54	
45,000	-69.70	4.35	
50,000	-69.70	3.43	
55,000	-69.70	2.69	
60,000	-69.70	2.12	
65,000	-69.70	1.67	
70,000	-69.70	1.31	
75,000	-69.70	1.03	
80,000	-69.70	0.81	
85,000	-64.80	0.64	
90,000	-56.57	0.50	
95,000	-48.34	0.40	
100,000	-40.11	0.32	

General  
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# Meteorological Basics

Through the cooperation of the different climatic elements like air temperature, humidity, fallout, solar radiation, wind and so forth the "**weather**" arises. Considered over a longer period, it is called "**Climate**".

The air surrounds the earth in the form of a wrapper and has a changeable pressure (Barometer reading). The lower shift at the earth's surface is called **troposphere** which reaches to about 11 km at our latitude. The **stratosphere** (11 to 75 km) and **ionosphere** (75 to 600 km) follow to that. The pressure caused by the weight of the air at the earth's surface is in the average 1013 mbar. If the density of the air were regular a height of 7990 m of the atmosphere would result from that by calculation. In reality the density and the temperature of the air decrease with height however.

## Decrease of air pressure and temperature with height

(Norm atmosphere, DIN ISO 2533 Dec. 79)

Height km	0	0,5	1,0	2,0	3,0	4,0	6,0	8,0	10	15	20
Pressure mbar	1013	955	899	795	701	616	472	356	264	120	55
Temperature °C	15	11,8	8,5	2,04	-4,5	-11	-24	-37	-50	-55	-55

Decrease of the temperature with the height: 6,5 K per km to about 11 km height. From 11 km to about 20 km temperature approximately unchangeable at about -55 °C. In 20 to 47 km height the temperature rises due to ozone formation to about 0 °C, then again temperature fall.

The sizes with which the air state is described are called "**State Values**".

## Pure dry air

Air is a mixture of gases, impurities and steam. There is dry pure air only in theory. This consists of:

		Vol.: %
Nitrogen	N <sub>2</sub>	78,060
Oxygen	O <sub>2</sub>	20,960
Argon	Ar	0,930
Carbon dioxide	CO <sub>2</sub>	0,030
Hydrogen	H <sub>2</sub>	0,010
Neon	Ne	0,002
Helium	He	0,00007
Krypton	Kr	0,0003
Xenon	Xe	0,00004

## Humid Air

Completely dry air does not exist in the free atmosphere. It always contains a certain part of steam is. Moist air is therefore a mixture of dry air and steam.

Too few or too much humidity damage the comfort feeling of the human being, and in many companies the quality of raw materials or products depends on the humidity in the warehouse and fabrication rooms.

## State variables of the air

### - Air Temperature

It characterizes the heat state of the air and can be measured among other things with a thermometer.

The information of the temperature are shown in ° **centigrade C** or absolutely in **kelvin K**.

A temperature difference is indicated always in **K**.

- **Average of the temperature**

The temperature prevailing at a place shows over the time a daily and annual wavelike process that is caused by the changing position of the sun. In order to compare the temperatures with each other, one forms temperature averages:

- The **middle daytime temperature** which is to be determined by hourly reading of the temperature. Until March 31, 2001, however, the mean  $t_m$  in Germany was determined by three readings, at 7, 2 and 9 p.m., using the empirical formula

$$t_m = \frac{t_7 + t_{14} + 2 \cdot t_{21}}{4}$$

### - Absolute humidity

With absolute humidity  $x$  the water amount in kg is defined, that is available per kg of dry air. In order to be able to work with more convenient numbers, the absolute humidity in tables and diagrams, however, is indicated in g ( $x = \text{g/kg}$ ).

### - Relative humidity

Dry air can hold only a specific maximum amount of steam at a specific temperature. The higher the temperature, the higher is the possible water content.

1 kg air of for example 25 ° C can include approx. 20 g water at zero meters above sea level, then it is saturated. If the absolute moisture of this air is only 10 g/kg, however, only 50 % of the maximally possible water amount is available, this means, the relative humidity  $r.F$  of the air is 50 %.

The relative humidity defines therefore, how large the available steam amount is in relation to the maximally possible amount (with same temperature) with the temperature existing at this moment.

### - Air pressure

Pressure is the strength acting on a surface.

- The pressure caused through the weight of the air on the earth's surface is the atmospheric pressure.

This is at sea level in the average 1013 mbar = 760 mm Hg.

- With air and heat-technical bills the pressure was often indicated formerly through the pressure height of liquid columns, for example mm water gauge (mm WS) or mm mercury column (mm Hg):

$$1 \text{ bar} = 1000 \text{ mbar} = 1000 \text{ hPa} = 10200 \text{ mm WS} = 750 \text{ mm Hg}$$

### - Density

### - Specific heat

### - Heat content or enthalpy

### - Material flow

## Influence of the altitude on the state variables of the air

- An air amount with the relative humidity  $r.F = 100 \%$  contains at 1000 meter altitude approx. 1,2 g/kg more water than at 0 m above sea level – this means for an air amount ( $t$  and  $r.F$  unchangeable) the water content  $x$  increases (absolute humidity) with increasing height.

- Air with  $r.F = 100 \%$  at 0 m above sea level becomes at 1000 meters altitude air with  $r.F = 88.7 \%$ . The difference is therefore  $\% r.F = 11.3$  - rule: the relative humidity  $r.F$  of an air amount sinks with increasing height ( $t$  and  $x$  unchangeable).

### Calculations with the h-x-Diagram:

The atmospheric pressure (barometer reading) must be considered at all calculations.

This is dependent above all on the altitude above sea level.

Most h-x-Diagrams refer to zero meters above sea level (SL)

correspondingly 1013 mbar = 760 mm Hg.

Conversion factors (h-x-Diagram):

Altitude m	0	200	400	600	800	1000	1500	2000
Pressure mbar	1013	989	966	943	921	899	842	795
Factor k	1.000	0.976	0.953	0.931	0.909	0.887	0.831	0.785

General  
Contents

## Change protected user file(s) „.sec“:

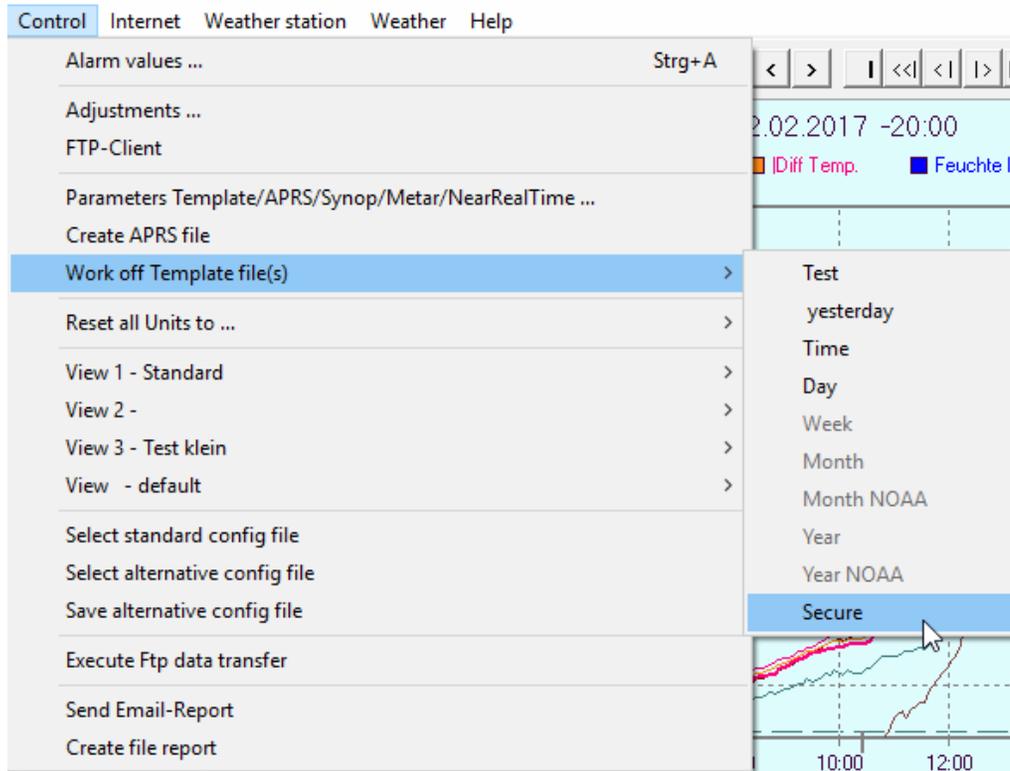
Generation or conversion of normal user files:

Prerequisite: The wswin\_sec.txt file must exist at the start of the conversion.

- only lines containing a "%" will be "protected"
- Lines with %openfile or %customfile are not encoded
- If such a line is not to be encoded, it must appear in line %ws\_nocoding%
- encoded lines are marked in the encoded file by a leading "#"

### Start of the coding under Control, Work off Template file(s) and then „Secure“.

station Operating- and Data Acquisition Software - V2.98.5



If in the wswin\_sec.txt and in the other files a %openfile ..., this "chain" is coded as well.

As a result file, the custom file name is always created with a new extension ".sec".

Rename wswin\_sec.txt to the desired filename (keep .sec)

The other filenames should fit from the "processing chain" with file extension ".sec".

You can also change such files (.sec) later - but not the encoded lines (start with "#")

You only have to teach the Text editor (Notepad) that it can open ".sec" files!

> How can one now encode another/one more file?

Either use the Open chain or copy it back to wswin\_sec.txt and re-encode it and

Then rename to the desired filename (.sec - do not change!).

Undoing a ".sec" file is not intended, therefore always keep/save the "original files (.txt)"!

General

Contents

# Customised file(s) ...

An available "**custom.txt**" file and/or "**wap.txt**" file in the **data folder** is prerequisite for this function - for Template the corresponding template files.

## Consider:

If you have not made any changes in the "**wswin.cfg**" for the data folder, the **program folder** is like the **data folder**.

## Default File names:

Custom.txt  
Wap.txt  
Custom\_r.txt  
Custom\_rw.txt  
Custom\_rm.txt  
Ws\_speech.txt  
Ws\_speech1h.txt  
Watch.csv  
Custom\_sms.txt  
Wswin\_nrt.txt  
ws\_secure.txt  
wswin\_sec.txt  
wswin-custom-x.txt/sec  
wswin-analyse.txt

## Template-Control-Files:

Time: template\_time.txt  
Day: template\_d.txt (or template\_day.txt)  
Week: template\_w.txt  
Month: template\_m.txt  
NOAA Month: template\_noaa\_m.txt  
Year: template\_y.txt  
NOAA Year: template\_noaa\_y.txt  
Season: template\_season.txt  
Test: template\_t.txt  
Test: template\_test~.txt

The "**custom.txt**" file is the **first** customised file for user-defined WEB pages.

The "**wap.txt**" is the **first** customised file for user-defined **WAP** WEB pages and **other** files.

## Both control files are equal - at which "custom.txt" are searched for first.

It is searched for to both control files and when found, their content is worked off.

### **Difference between both files:**

If no variable **customfile=** is in the "**wap.txt**" indicated, a **custom.wml** is made always!

Into the destination files that follow from the wap.txt (with continuation files)

**the Copyright and generator META-TAG's are not merged.**

In addition the entry **%openfile=xxxx.xxx%** is not transmitted in the same way into the destination file.

See and test with the sample file "wap\_.txt" (rename for use to "wap.txt").

You need a WAP-capable Handy for the controlling of the result of the WAP-wml-files of course, and/or with the WEB-browser "**Opera**" (from version 4) it is also possible.

**Caution!** The max. number of the user-defined WEB-pages is a sum from both control files.

## Caution!

The maximum of the user-defined Web sides is an addition from both control files and can amount to at most 255! At this time, 20 nestings are anticipated (= 20 customised. Web / text – sides).

In **Wswin.cfg**: section **[html]** entry **Customfiles=20** one can increase the number.

**Caution** "CustomFile"->boolean-value is not immediately "Customfiles"->max. number of own Html - files

With the Template - files a maximum nestings of 3 is anticipated!

If the variable **%customfile=eigenesweb.html%** is found in the 1st line,

**- it must stand also in the 1st line -**

so the here indicated file is made from this control file/Html file.

If no variable **"%customfile="** is indicated, a **custom.html** is created always !

This line is not merged into the destination file !!!!

If the control file is identical (same name) with the destination file (openfile - see below),

**"ws\_"** is put before the destination file ! But who did do something like that?

#### **From V2.80.5:**

Is given in the name for the destination file a **"path"**, for example D:\Own Files\Weather\Result\export.csv so becomes the file in the **indicated path filed**, if the path **does not exist**, it is attempted so to **make this directory structure**.

#### **From V2.98.5:**

Modify-protected user files, recognizable by the file extension ".sec", are supported.

Important: The first Custom startup files can not have a .sec extension

There may also be a custom.sec or wap.sec file (only not as startup file).

With the support of the variables **"%customfile= ...%"** and **"%openfile= ...%"** or **"%openfile&remove=...%"**

No more boundaries are set to your creativity.

**Only those variable/sensor values are considered** and/or the corresponding values which were selected in the program at **"Available Sensors"**.

The used values relate always to the chosen display period **"Day"** and/or **"24 hours"** (can therefore lie also in the past)

**The same variable can occur only twice in a line!** (Alteration of 1 on 2 in V2.83.0)

If a variable

```
<!-- %openfile=nexste.txt% -->
```

is found in the control file (somewhere),

then after the working off of the current control file ,

this mentioned file attempts to find and when found, it is worked off again.

The variable should be included into sign comment

-> -> so that the WEB browser can interpret this!!!

**Caution!** The control files must be in the **data folder** and the results are saved after processing in the **html folder** or as well as the **anticipated path**.

The following variables are supported:

**Values from -1..46 are available -> see also Indices (dependent on weathers station type)**

MainHumidity = -1

Main-OutTemp = 0 (the sensor, which is used also for the dew point calculation)

Temperature = 1..16

Humidity = 17..32

Barometer = 33

Rain = 34

Wind force = 35

Wind direct. = 36

Barometer = 37..42 or special ....

Brightness = 38

ET = 40

UV = 41

Solar rad = 41

Dew point = 43

Wind chill = 44

Wind gust = 45

ISS receiving = 46

#### **VantagePro bzw. Weatherlink:**

Min. Temp = 6

Max Temp = 7

Temp. Leaf = 9..12

Temp. Soil = 13..16  
Leaf Wetness = 25..28  
Moisture = 29..32

**WS2500:**

Solar (lux) = 38  
Solar(W/m<sup>2</sup>) = 42  
Indexe 10..16,26..32,38..41 there are not available

**Netatmo:**

Temperature inside = 1  
Temperature out = 2  
Temperature M1..M3 = 3..5  
Carbon dioxide i. = 13  
Carbon dioxide M1 = 14  
Carbon dioxide M2 = 15  
Carbon dioxide M3 = 16  
Humidity inside = 17  
Humidity outside = 18  
Humidity M1..M3 = 19..21  
Volume inside = 26  
Battery wind = 27  
Battery rain = 28  
Battery outer m = 29  
Battery M1 = 30  
Battery M2 = 31  
Battery M3 = 32  
Air pressure = 33  
Rain = 34  
Wind Speed. = 35  
Wind direction = 36  
Dew point = 43  
Windchill = 44  
Wind gusts = 45

**Time sensors** (the values are always in minutes)

Sunshine time = 37  
Time Sensort = 39

For every value [x] with (x=-1..46) the following variables are at your disposal:

Short name  
Description  
Current value sensor  
Average value sensor  
MinValue sensor  
MinTime sensor  
MaxValue sensor  
MaxTime sensor  
Unit names  
Sensor available+Html  
Sensor date installation

In case of atmospheric pressure, rain and wind direction additional variables are at your disposal (see below) !

---

**List of all supported variables:**

---

With the variables, that with a leading or final one "\*" is marked, for example %curval[x]%, one can show the values also with a alternative unit:

This variable is "line-referential" and can occur in a line for a sensor typ only once.  
It must be placed again per line every time!



Current Week	%ws_week%	
Current day	%ws_day%	
Current hour	%ws_hour%	
Current minute	%ws_minute%	
Day of year	%ws_dayyear%	
Day of week	%ws_dayweek%	(1..7) 1=Monday
Week period	%ws_weektxt%	
Current month Monat 2sign	%ws_month2%	
Current day 2 sign	%ws_day2%	
Current hour 2 sign	%ws_hour2%	
Current minute 2 sign	%ws_minute2%	
Current UTC-Year	%ws_utc_year%	
Current UTC-Month 2char	%ws_utc_month%	
Current UTC-Day 2char	%ws_utc_day%	
Current UTC-Hour 2char	%ws_utc_hour%	
Current UTC-Minute 2char	%ws_utc_minute%	
UTC-Date/Time	%ws_utc_datetime%	
RFC822 Date/Time	%ws_rfc822datetime%	
Unix32Date/Time	%ws_unix32datetime%	
Second Near Realtime	%ws_nrt_sec%	
Time Near Real Time	%ws_nrttime%	
Date Near Real Time	%ws_nrtdate%	
Current Time	%ws_time%	
UTC Time difference	%ws_utc%	
Summertime corr minutes	%ws_daylightminutes%	
Current reference Time	%daylightname%	
Days of month	%ws_daysmonth[mm~yyyy]%	
Day of the week	%ws_weekday[dd~mm~yyyy]%	1..7 (1=Mo)
Day of the week certain rel. date	%ws_weekday[25~12~0000]%	
certain rel. date	%ws_datex[xxx~dd~mm~yyyy]%	
	%ws_datex[-2~25~12~0000]%	
WsWinVersion	%ws_vers%	
WsWinVersion	%ws_vers0%	
WsWinVersion.x	%ws_vers1%	
Weather station type	%ws_typ%	
Weather station identifier	%ws_iftyp%	->10,20,21,22,23,40,50 or 60
Data interval	%ws_intervall%	
Data interval avg	%ws_intervallavg%	
Collecting long-term data	%ws_calclongtimedata=Yes~No%	
Use year file	%ws_calcyearfile=Yes~No%	
Calculate ET	%ws_calc_et=Yes~No%	
Calculate Windrun	%ws_calcwindrun=Yes~No%	
Calculate SolarRad	%ws_calcsolarrad=Yes~No%	
Time sensor <= calculated.	%Ws_calctimec=Yes~No%	
24h View	%ws_calc24h=Yes~No%	
Def. Graphics choosen	%ws_calcgrafics=Yes~No%	
Thermal load	%ws_calctherm=Yes~No%	
Snowfall	%ws_calcsnowfall=Yes~No%	
Cloud base	%ws_calcsclouds=Yes~No%	
Show sea state	%ws_calcseastate=Yes~No%	
Show Moon Data	%ws_calcmoon=Yes~No%	
Show sun data	%ws_calcsun=Yes~No%	

show last frost	%ws_calcice=Yes~No%	
Display statistics	%ws_calcstatistics=Yes~No%	
Remark 1	%ws_remark1%	
Remark 2	%ws_remark2%	
Short name	%shortslabel[id]%	id = -1..46
Description	%longslabel[id]%	
Current value	%curval[id]%	*
Average value	%avgval[id]%	*
NearRealTime Value	%nrtval[id]%	*
Min value	%minval[id]%	*
Min time	%mintime[id]%	
Min time current day	%mintimecurday[id]%	
Min-day/month	%mindaymonth[id]%	
Max value	%maxval[id]%	*
Max time	%maxtime[id]%	
Max time current day	%maxtimecurday[id]%	
Max-day/month	%maxdaymonth[id]%	
Dewpoint sensor pairs	%dewpoint[x]%	x = 0..16
Heat Index	%heatindex[x]%	x = 0..16
Absolut humidity	%abshum[x]%	x = 0..16
Trend	%ws_trend[x]%	x = -1..46 0=constant, 1=rising, -1=falling
Temperature changing in the last (mm) minutes	%tempchange[x]=mm% *	x = 0..16, 43, 44 <b>mm = 1..60</b> -> if 'mm' is smaller then the recording interval, then for mm the recording interval is used. With invalid values (for example >60 or sign) becomes '?' given back as a result !
Value changing in the last (mm) minutes	%valuechange[x]=mm% *	<b>x = -1 .. 46</b> <b>mm = 1..60</b> -> if 'mm' is smaller then the recording interval, then for mm the recording interval is used. With invalid values (for example >60 or sign) becomes '?' given back as a result !
State-WS2xxx-Sensor	ws_state_sens[x]%	<b>x = 1..16, 34,35</b> Answer: --- -> invalid Test or State not active ok -> Sensor without receiving error 0 -> Sensor not available 1(..254) -> Number of receiving errors
State-WMRxxx-Sensor	%ws_state_sens[x]%	<b>x = 1.. 5, 33,34,35</b> Answer: 8x -> only ID=33 -> weak display battery (x=minutes) 00 .. D0 -> Direct edition of the state byte of these sensors at what "0x" = battery 100 % - "8x" = emptily of battery look also at program help for this purpose!
State in color	%ws_colorstate_sens[x]%	-> black=not available, red=>5, yellow=>1, green=ok (for light)
Total amount act values	%ws_stateakt_sens[00]%	only at WS2000,WS2500
Count values with act flag	%ws_stateakt_sens[x]%	only at WS2000,WS2500 and x = 0..16, 34,35, 38
Value in percent	%ws_state_0-100[value]%	0-10->0, 11-25->25; 26-50->50; 51-75->75; 76-100->100%

Value current? %ws\_akt\_sens[x]% only at WS2000,WS2500 and x = 0..16, 34,35, 38  
- = not available; 0 = not current; 1 = current

Received signal quality in %: %ws\_calc1[\*]=%ws\_calc[%ws\_stateakt\_sens[x]%-%ws\_stateakt\_sens[00]%-4%~100~2% %

Unit names %unitname[id]% \*  
Unit names long %unitnamelong[id]%

Sensor installation date %sensorinstalled[id]%

Sensor available+Html %ws\_available[id]=Yes,No%  
Sensor available %ws\_availableX[id]=Yes,No%  
Sensor available %ws\_availabletyp[id~tt]=Yes~No%  
and Weatherstation typ tt: 10=WMx, 20=WS2000-PC, 21=Wetterempfänger, 22=WS2500, 23=WS2500-PC  
is same 40=VantagePro, 50=TE923, 60 Climalogger  
If a station type not 10,20,21,22,23,40,50 or 60 selected, for example 00,  
then this variable is the same as %ws\_availableX[id]=Yes~No%  
- > Weather station type is not considered.

Hour values %curminmaxhour[a,h,id]% \*  
a: 0=current,1=min,2=max,3=average, 4= difference  
a: 3=average and windir = dominating direction  
a: 5=exact hour current value  
h: 0, 1..24 hours  
with 0 = day beginning = consideration only data current day  
id: (-1..46)

Min-value month/year %ws\_m\_minval[%ws\_month%,id]% \*  
Min-time month/year %ws\_m\_mintime[%ws\_month%,id]%  
Min-day month/year %ws\_m\_minday[%ws\_month%,id]%  
Max-value month/year %ws\_m\_maxval[%ws\_month%,id]% \*  
Max-time month/year %ws\_m\_maxtime[%ws\_month%,id]%  
Max-day month/year %ws\_m\_maxday[%ws\_month%,id]%  
Average month/year %ws\_m\_avg[%ws\_month%,id]% \*  
Options for: ws\_month=0..12, 0=year, 1..12=month id=-1..46

Value min. day temp %ws\_m\_dayvalmintemp[%ws\_month]% \*  
Day min. day temp %ws\_m\_daydaymintemp[%ws\_month]%  
Value max. day temp %ws\_m\_dayvalmaxtemp[%ws\_month]% \*  
Day max. day temp %ws\_m\_daydaymaxtemp[%ws\_month]%  
Options for: ws\_month=0..12, 0=year, 1..12=month

Variables only valid for week,month,year:

Min-value day %minvalday[id]% \* at month\_only too  
Min-time day %mintimeday[id]% at month\_only too  
Min-day day %mindayday[id]% at month\_only too  
Min-day day short %mindaydays[id]% at month\_only too

Max-value day %maxvalday[id]% \* at month\_only too  
Max-time day %maxtimeday[id]% at month\_only too  
Max-day day %maxdayday[id]% at month\_only too  
Max-day day short %mindaydays[id]% at month\_only too

Average month %avgmonth[id]% \* **only with month\_only**

----- Variables for data in the past -----

### Sensor value at arbitrary times

%curvaldatetime[id~x~dd.mm.yyyy~~hh:nn]% -> at Setting Date Time  
%curvaldatetime[id~x~hh:nn~~dd.mm.yyyy]% -> at Setting Time Date

x=0 Data for exactly this time/date

x=1 Data for exact or nearest time/date if not found exactly

x=2 Data for exact or nearest time/date if not exact additional time/date output  
 x=3 Data for exact or next time/date - always additional Time/date output  
 is for dd = 00 used (month/year then irrelevant) - the current day is used for this  
 is for yyyy a negative value e.g. -003 used, the program proceeds according to the value  
 - then dd can not be 00 - otherwise this entry is ignored  
 Date separator (.) Time separator (:) and date Time separator (~) can be arbitrary - must not be missing!  
 If no data is available for the predefined time/date, and not x>0, the result is "--"  
**Attention! Artificial sensors or calculations thereof (e.g., minimum selection) do not find any Consideration. Exception: dew point and windchill.**

**Example:**

```
[0~0~00.00.0000~~maxti]           %curvaldatetime[0~3~00.00.0000~~%maxtime[0] ]%
Last Frost day last year.           %curvaldatetime[0~3~%lastcoldday_mpast[00~~001] %~~%lastcolddaytime_mpast[00~~001] ]%
Last Frost day in year               %lastcoldday_mpast[00~~001] %
Last Frost day time                  %lastcolddaytime_mpast[00~~001] %
Value last Frost day year           %lastcolddayval_mpast[00~~001] %

[0~0~00.00.0000~~08:01]           %curvaldatetime[0~0~00.00.0000~~08:01] %
[0~0~24.12.2015~~08:01]           %curvaldatetime[0~0~24.12.2015~~08:01] %
[0~0~10.12.2015~~08:03]           %curvaldatetime[0~0~10.12.2015~~08:03] %
```

**Output Date** %datepast[dd~mm~yyyy] % Output always in the format dd.mm.yyyy  
 possibility like %maxdatepast[id~dd~mm~yyyy] %  
 Example output date %datepast[-1461~0~00] % on 23.12.2016 -> 23.12.2012

**Allocation date** %setdatepast[dd~mm~yyyy] %  
**Alloctioan month/year** %setmonthyear[mm~yyyy] %

**Days variables:**

```
Average x-day %avgvalpast[id~dd~mm~yyyy] % *
Average x-day Sol %aavgvalpast[42~dd~mm~yyyy] %
Min-value x-day %minvalpast[id~dd~mm~yyyy] % *
Min-time x-day %mintimepast[id~dd~mm~yyyy] %
Min-date x-day %mindatepast[id~dd~mm~yyyy] %
Max-value x-day %maxvalpast[id~dd~mm~yyyy] % *
Max-time x-day %maxtimepast[id~dd~mm~yyyy] %
Max-date x-day %maxdatepast[id~dd~mm~yyyy] %
```

**id: -1..46**  
**dd:** day -31..00..31 must to be always two-digit  
**mm:** month -12..00..12 must to be always two-digit  
**yyyy:** year must to be always four-digit, -001 is last year  
 for 00 and/or 0000 current day/month/year is used  
 if negative value occurs: prioritaeet day, month, year  
 that is, if day is a negative value, month and year automatic  
 set onto the current month/year.

**Caution! Date-length dd~mm~yyyy always must be 10 digits!!**  
 Is for dd -31 used (3 digits), then must for mm 0 used  
 Is for mm -12 used (3 digits), then must for dd 0 used

Example: maxdatepast [0~-31~0~0000]  
 or maxdatepast [0~0~-12~0000]  
 also allows: maxdatepast [0~-1461~0~00]

**Peculiarity:**

Is for yyyy: 9999 as year used, the program uses the previously assigned day-, month-, year-values.  
 Example: % avgvalpast [0~%ws\_day2%~00 ~ -001] % % avgvalpast [0~00~00~9999] %

In order to step up the processing of these variables, for chronological execution you should summarizing the same time dates.

**Month-/Year- variables:**

**id: -1..46**  
**mm:** month -12..00..12 have to be at least two-digit, 00=year dates  
**yyy:** Year must be treble, if month -10, -11, -12!!!

**yyyy**: year must be always four digit, there is: **2005** direct year,  
**0000(000)**=current year, **-001** is last year and so on

**Peculiarity:**

Is for **yyyy**: **9999** as year used, the program uses the previously assigned month-, year-values.

Average x-Month/Year	%avgval_mpast[id~mm~yyyy]% *	
Average x-month/year	%aavgval_mpast[42~mm~yyyy]%	
Min-Val x-Month/Year	%minval_mpast[id~mm~yyyy]% *	
Min-Time x-Month/Year	%mintime_mpast[id~mm~yyyy]%	
Min-Average M/Y	%avgmin_mpast[id~mm~yyyy]% *	
Min-Average Date M/Y	%avgmindate_mpast[id~mm~yyyy]%	
Max-Average M/J	%avgmax_mpast[id~mm~yyyy]% *	
Max-Average Date M/Y	%avgmaxdate_mpast[id~mm~yyyy]%	
Min-Date x-Month/Year	%mindate_mpast[id~mm~yyyy]%	
Max-Val x-Month/Year	%maxval_mpast[id~mm~yyyy]% *	
Max-Time x-Month/Year	%maxtime_mpast[id~mm~yyyy]%	
Max-Date x-Month/Year	%maxdate_mpast[id~mm~yyyy]%	
Avg.MinTemp. x-Month/Y.	%avgmintemp_mpast[mm~yyyy]% *	
Avg.MaxTemp. x-Month/Y.	%avgmaxtemp_mpast[mm~yyyy]% *	
Ice days x-month/year	%icedays_mpast[mm~yyyy]%	
Cold days x-month/year	%colddays_mpast[mm~yyyy]%	
Cool days x-month/year	%cooldays_mpast[mm~yyyy]%	
Summerdays x-month/year	%warmdays_mpast[mm~yyyy]%	
Hot days x-month/year	%hotdays_mpast[mm~yyyy]%	
Days <= x-Month/Year	%uldays_mpast[mm~yyyy]%	
Days >= x-Month/Year	%uhdays_mpast[mm~yyyy]%	
Days User3 x-Month/Year	%u3days_mpast[mm~yyyy]%	
Days User4 x-Month/Year	%u4days_mpast[mm~yyyy]%	
Days User5 x-month/year	%u5days_mpast[mm~yyyy]%	
Soil frost days x-m/y	%frostgrowdays_mpast[mm~yyyy]%	
Tropics nights year	%tropnighdays_mpast[mm~yyyy]%	
Heatdegree days x-m/y	%heatdegreedays_mpast[mm~yyyy]%	
Cooldegree days x-m/y	%cooldegreedays_mpast[mm~yyyy]%	
Growdegree days x-m/y	%growdegreedays_mpast[mm~yyyy]%	
XHeatdegree days x-m/y	%xheatdegreedays_mpast[mm~yyyy]%	
Season Ice+Summer days	%season_coldwarmdays[ddmmyyyy~DDMMyyyy]%	
Season days <0 + >=20°C	%season_cold20warmdays[ddmmyyyy~DDMMyyyy]%	
Season days <0 + >=15°C	%season_cold15warmdays[ddmmyyyy~DDMMyyyy]%	
Season days <0 + >=10°C	%season_cold10warmdays[ddmmyyyy~DDMMyyyy]%	
Growing temperature	%growingtemp_mpast[00~yyyy]%	
Growing temperature date	%growingtempdate_mpast[00~yyyy]%	
First cold day year	%firstcoldday_mpast[00~yyyy]%	Northern hemisphere = 2.semester
First cold day time year	%firstcolddaytime_mpast[00~yyyy]%	
Value 1. cold day year	%firstcolddayval_mpast[00~yyyy]%	
Last cold day year	%lastcoldday_mpast[00~yyyy]%	Northern hemisphere = 1.semester
Last cold day time year	%lastcolddaytime_mpast[00~yyyy]%	
Value last cold day year	%lastcolddayval_mpast[00~yyyy]%	
1. grow frost day year	%firstgrowfrostday_mpast[00~yyyy]%	Northern hemisphere = 2.semester
1. grow frost daytime	%firstgrowfrostdaytime_mpast[00~yyyy]%	
1. grow frost value	%firstgrowfrostdayval_mpast[00~yyyy]%	

Last growfrostday year	%lastgrowfrostday_mpast[00~yyyy]%
L. growforstdaytime y	%lastgrowfrostdaytime_mpast[00~yyyy]%
value last growfrost	%lastgrowfrostdayval_mpast[00~yyyy]%
Wind number values	%wind_values_mpast[mm~yyyy]%
Wind force 0Bft in %	%windbftproz_0_mpast[mm~yyyy]%
Wind force 1Bft in %	%windbftproz_1_mpast[mm~yyyy]%
Wind force 2Bft in %	%windbftproz_2_mpast[mm~yyyy]%
Wind force 3Bft in %	%windbftproz_3_mpast[mm~yyyy]%
Wind force 4Bft in %	%windbftproz_4_mpast[mm~yyyy]%
Wind force 5Bft in %	%windbftproz_5_mpast[mm~yyyy]%
Wind force 6Bft in %	%windbftproz_6_mpast[mm~yyyy]%
Wind force 7Bft in %	%windbftproz_7_mpast[mm~yyyy]%
Wind force 8Bft in %	%windbftproz_8_mpast[mm~yyyy]%
Wind force 9Bft in %	%windbftproz_9_mpast[mm~yyyy]%
Wind force 10Bft in %	%windbftproz_10_mpast[mm~yyyy]%
Wind force 11Bft in %	%windbftproz_11_mpast[mm~yyyy]%
Wind force>=12Bft in %	%windbftproz_12_mpast[mm~yyyy]%
Wind force Gust (only valid for WM-918, WMR-9x8, VantagePro)	
Wind Anzahl Werte	%windg_values_mpast[mm~yyyy]%
Wind force 0Bft in %	%windgbftproz_0_mpast[mm~yyyy]%
Wind force 1Bft in %	%windgbftproz_1_mpast[mm~yyyy]%
Wind force 2Bft in %	%windgbftproz_2_mpast[mm~yyyy]%
Wind force 3Bft in %	%windgbftproz_3_mpast[mm~yyyy]%
Wind force 4Bft in %	%windgbftproz_4_mpast[mm~yyyy]%
Wind force 5Bft in %	%windgbftproz_5_mpast[mm~yyyy]%
Wind force 6Bft in %	%windgbftproz_6_mpast[mm~yyyy]%
Wind force 7Bft in %	%windgbftproz_7_mpast[mm~yyyy]%
Wind force 8Bft in %	%windgbftproz_8_mpast[mm~yyyy]%
Wind force 9Bft in %	%windgbftproz_9_mpast[mm~yyyy]%
Wind force 10Bft in %	%windgbftproz_10_mpast[mm~yyyy]%
Wind force 11Bft in %	%windgbftproz_11_mpast[mm~yyyy]%
Wind force>=12Bft in %	%windgbftproz_12_mpast[mm~yyyy]%
Dom. wind direction	%domwind_txt_mpast[mm~yyyy]%
Dom. wind direction Gust	%domwindg_txt_mpast[mm~yyyy]%
Wind calm %	%wind_calmproz_mpast[mm~yyyy]%
DistributionWD% N-NE	%winddirproz_NNE_mpast[mm~yyyy]%
DistributionWD% NE	%winddirproz_NE_mpast[mm~yyyy]%
DistributionWD% NE-E	%winddirproz_NEE_mpast[mm~yyyy]%
DistributionWD% E	%winddirproz_E_mpast[mm~yyyy]%
DistributionWD% E-SE	%winddirproz_ESE_mpast[mm~yyyy]%
DistributionWD% SE	%winddirproz_SE_mpast[mm~yyyy]%
DistributionWD% SE-S	%winddirproz_SES_mpast[mm~yyyy]%
DistributionWD% S	%winddirproz_S_mpast[mm~yyyy]%
DistributionWD% S-SW	%winddirproz_SSW_mpast[mm~yyyy]%
DistributionWD% SW	%winddirproz_SW_mpast[mm~yyyy]%
DistributionWD% SW-W	%winddirproz_SWW_mpast[mm~yyyy]%
DistributionWD% W	%winddirproz_W_mpast[mm~yyyy]%
DistributionWD% W-NW	%winddirproz_WNW_mpast[mm~yyyy]%
DistributionWD% NW	%winddirproz_NW_mpast[mm~yyyy]%
DistributionWD% NW-N	%winddirproz_NWN_mpast[mm~yyyy]%
DistributionWD% N	%winddirproz_N_mpast[mm~yyyy]%
Rain x-Month/Year	*%rain_mpast[mm~yyyy]%
Rain days Year/Month	%raindays_mpast[mm~yyyy]%
Rain days >0mm x-M/Y	%rain0days_mpast[mm~yyyy]%
Rain days 2 mm x-M/Y	%rain2days_mpast[mm~yyyy]%

Rain days 5 mm x-M/Y	%rain5days_mpast[mm~yyyy]%
Rain days 10mm x-M/Y	%rain10days_mpast[mm~yyyy]%
Rain days 20mm x-M/Y	%rain20days_mpast[mm~yyyy]%
Windrun x-Month/Year	%windrun_mpast[mm~yyyy]%
Evapotransp. x-M./Y.	*%ws_evapotrans_mpast[mm~yyyy]%
ET VantagePro x-M./Y.	*%ws_evapotransvt_mpast[mm~yyyy]%
Timesensor X-Month/Year	%t_sens_mpast[mm~yyyy]%
Suntime x-Month/Year	%sun_mpast[mm~yyyy]%
Time sensor decimal	%t_sens_d_mpast[mm~yyyy]%
Sun time decimal	%sun_d_mpast[mm~yyyy]%

Example:

Average x-Month/Year	%avgval_mpast[2~00 ~-001]%
Avg.MinTemp. x-Month/Y.	%avgmintemp_mpast[01~2003]%
Avg.MaxTemp. x-Month/Y.	%avgmaxtemp_mpast[%ws_month2%~-001]%

----- variables for data for any period -----

**id = -1 .. 46 (-1= main outdoor hum, 0= main outdoor temperature)**

yyyy: year must be always 4-digit, mm month must be always 2-digit, dd day must be always 2-digit

Is for yyyy a negative value (f.e -001) set, uses the program the

current year minus this value for example 2009 -> 2008

is for yyyy "0000" used, uses the program the current viewing year.

**Peculiarity:**

If the start date is in the future, so the program declines one year

If the end date lies in the future, the data are determined until the current day!

From version V2.97.0 is also supported for end(-date):

```
Beginning~End
"[ddmmyyyy~ddmmyyyy]"
dd   = 00 = current day
dd   < 0 for example -1 (.. -9), days backwards from the current day
mm   = 00 = current month
yyyy = 0000 = current year
```

**Examples:**

[2~01090000~30100000] and the current computer date is 2009-01-10 so the program shows the data from 2008-09-01 to 2008-10-30.

[2~01090000~30100000] if the current computer date is 2009-11-01 so the program shows the data from 2009-09-01 to 2009-10-30.

[2~0101-003~00000000] and the current computer date is 2013-01-03 so the program shows the data from 2010-01-01 to 2013-01-03.

[2~0101-003~-10000000] and the current computer date is 2013-01-03 so the program shows the data from 2010-01-01 to 2013-01-02.

At invalid data (for example year only 3 chars) the program give as result "- -"

Spring season	%ws_seasonxt_spring[yyyy]%	
Summer season	%ws_seasonxt_summer[yyyy]%	
Autumn season	%ws_seasonxt_autumn[yyyy]%	->22.09.2009~20.12.2009
Winter season	%ws_seasonxt_winter[yyyy]%	->21.12.2009~19.03.2010

Spring season	%ws_season_spring[yyyy]%
Summer season	%ws_season_summer[yyyy]%
Autumn season	%ws_season_autumn[yyyy]%
Winter season	%ws_season_winter[yyyy]%

Spring season meteo.	%ws_seasonxt_springmeteo[yyyy]%
Summer season meteo.	%ws_seasonxt_summermeteo[yyyy]%

Autumn season meteol. %ws\_seasontxt\_autumnmeteol[yyyy]%  
 Winter season meteol. %ws\_seasontxt\_wintermeteol[yyyy]%

Spring season meteol. %ws\_season\_springmeteol[yyyy]%  
 Summer season meteol. %ws\_season\_summermeteol[yyyy]%  
 Autumn season meteol. %ws\_season\_autumnmeteol[yyyy]%  
 Winter season meteol. %ws\_season\_wintermeteol[yyyy]%

It is **07.04.2010** then this is

Spring season %ws\_season\_spring[0000]% ->20032010~20062010  
 Summer season %ws\_season\_summer[0000]% ->21062009~21092009  
 Autumn season %ws\_season\_autumn[0000]% ->22092009~20122009  
 Winter season %ws\_season\_winter[0000]% ->21122009~19032010

**from V2.96.4 also -901, -902 and so on are  
 as relative reference possibly: here the program goes  
 another year back, if the period didn't just start**

**Example current day is 27.03.2011**

Spring season [0000]=21032011~20062011  
 Summer season [0000]=21062010~22092010  
 Autumn season [0000]=23092010~21122010  
 Winter season [0000]=22122010~20032011

Spring season [-001]=20032010~20062010  
 Summer season [-001]=21062010~22092010  
 Autumn season [-001]=23092010~21122010  
 Winter season [-001]=22122010~20032011

Spring season [-901]=20032010~20062010  
 Summer season [-901]=21062009~21092009  
 Autumn season [-901]=22092009~20122009  
 Winter season [-901]=21122009~19032010

Spring season [-902]=20032009~20062009  
 Summer season [-902]=21062008~21092008  
 Autumn season [-902]=22092008~20122008  
 Winter season [-902]=21122008~19032009

**Period Month/Year %ws\_seasontxt\_monthyear[mm~yyyy]%**

**Example for current 25.12.2010:**

Period month/year %ws\_seasontxt\_monthyear[00~-002]% ->01.01.2008~31.12.2008  
 Period month/year %ws\_seasontxt\_monthyear[00~0000]% ->01.01.2010~31.12.2010  
 Period month/year %ws\_seasontxt\_monthyear[-1~-001]% ->01.11.2009~30.11.2009  
 Period month/year %ws\_seasontxt\_monthyear[-12~-01]% ->01.12.2008~31.12.2008  
 Period month/year %ws\_seasontxt\_monthyear[-12~000]% ->01.12.2009~31.12.2009

**Period month/year %ws\_season\_monthyear[mm~yyyy]%**

mm: month -12..00..12 have to be at least two-digit, 00=year dates  
 yyy: Year must be treble, if month -10, -11, -12!!!  
 yyyy: year must be always four-digit, there is: 2005(example) direct year  
 0000(000)=current year, -001 is last year and so on ...  
 is mm~yyyy -> 99~0000 so the period from recording begin to the  
 current day is used!

Period month/year %ws\_season\_monthyear[00~-002]% ->01012008~31122008  
 Period month/year %ws\_season\_monthyear[00~0000]% ->01012010~31122010  
 Period month/year %ws\_season\_monthyear[-1~-001]%  
 Season cold days %season\_cooldays[%ws\_season\_monthyear[-1~-001] ]%

Compare month/year min	%season_monthmin[id~mm~bbbb~eeeeN]% -> Result only value
Compare month/year max	%season_monthmax[id~mm~bbbb~eeeeN]% -> Result only value
Year of the comparison	%season_year% -> query in new line
Compare m/y min	%season_monthminr[id~mm~bbbb~eeeeN]% -> result year and value
Compare m/y Max	%season_monthmaxr[id~mm~bbbb~eeeeN]% -> result year and value
Year of the comparison	%season_yearr% > in same line, like variable -> doesn't work with _mpast!
Compare m/y min	%season_monthmind[id~mm~bbbb~eeeeN]% -> result date and value
Compare m/y Max	%season_monthmaxd[id~mm~bbbb~eeeeN]% -> result date and value

-> if date isn't correct (with **A,B,C** = average) result is year and value  
-> With min and A and ID34=Rain or ID37=Sunshine or ID39=RainTime  
the minimally value must be greater 0 (example 0.001) otherwise the programs ignores such.  
-> With min and D and ID34=Rain or ID37=Sunshine or ID39=RainTime  
also a minimally value of "0" is allowed.

**id = -1 .. 46 (-1=main outdoor humidity, 0=main outdoor temperature)**

**mm:** Month 01..12 must be at least two-digit, 00=year, 99=current month

**bbbb:** beginning-year - must be four-digit, 0000=year of record-start/available since

**eeee:** end-year - must be four-digit, 0000=current year

**N=Compare Typ:**

**A**=Month(year)-average value

**B**=Month(year)-average-minimal-value, only with id=0 as well as. main outdoor temp.sensor

**C**=Month(year)-average-maximum-value, only with id=0 as well as. main outdoor temp.sensor

**D**=Month(year)-average value -> take "0"-values into account

**L**=Month(year)-minimal-value

**H**=Month(year)-maximum-value

**S**=month(year)-Sum average: only for ID = 34,37,38,39,40 (rain, sunshine, sun, rain time, ET)

**R**= as S only for year and ID = 34,37,38,39,40 with logging in the wswinerr.txt file

**T**= as S only for year for ID = 34,37,38,39,40 with consideration of 0 values (except for year!)

**S**=month(year) average of mean values: for all IDs except 34,37,39,40

**X**=month-day maximum value: only for ID = 35,45,38,41,42 (wind, gust of wind, brightness, UV, solar radiation)

Result YYYY VVVV (year value) at season\_monthminr as well as season\_monthmaxr  
with 0000 for year as well as 99 for month the program did not takes into account the data for average-values  
the current year as well as current month.

For **id = 35,45,38,41,42** (Wind,Gust,Brightness,UV,Solarradiation) und Compare Typ X

**X=Monthly-day-max-value**

the Result is the minimum of all day-maxima for the choosen month over years!

Compare month min	%season_monthmin[id~mm~bbbb~eeeeX]% -> result only value
Compare month min	%season_monthminr[id~mm~bbbb~eeeeX]% -> result year month and value
Compare month min	%season_monthmind[id~mm~bbbb~eeeeX]% -> result date and value

For **id = 34,37,39,40** (Rain, Sunshinetime, Rain duration,ET) and Compare Typ S

**S=Month/Year-Sum-averages-value**

Average Month/Year	%season_monthmin[id~mm~bbbb~eeeeS]% -> with consideration of 0 values
Average Month/Year	%season_monthmax[id~mm~bbbb~eeeeS]% -> without consideration of 0 values

Season Average	*%season_avg[id~ddmmyyyy~ddmmyyyy]%
Season Sum	*%season_sum[id~ddmmyyyy~ddmmyyyy]%

Season MinValue	*%season_min[id~ddmmyyyy~ddmmyyyy]%
Season MinTime	%season_mintime[id~ddmmyyyy~ddmmyyyy]%
Season MinDate	%season_mindate[id~ddmmyyyy~ddmmyyyy]%
Season MinTime+Date	%season_mindt[id~ddmmyyyy~ddmmyyyy]%

Season MaxValue	*%season_max[id~ddmmyyyy~ddmmyyyy]%
Season MaxTime	%season_maxtime[id~ddmmyyyy~ddmmyyyy]%
Season MaxDate	%season_maxdate[id~ddmmyyyy~ddmmyyyy]%
Season MaxTime+Date	%season_maxdt[id~ddmmyyyy~ddmmyyyy]%

Season MinAvgValue	*%season_minavg[id~ddmmyyyy~ddmmyyyy]%	
Season MinAvgDate	%season_minavgdate[id~ddmmyyyy~ddmmyyyy]%	
Season MaxAvgValue	*%season_maxavg[id~ddmmyyyy~ddmmyyyy]%	
Season MaxAvgDate	%season_maxavgdate[id~ddmmyyyy~ddmmyyyy]%	
Season MaxSumValue	*%season_maxs[id~ddmmyyyy~ddmmyyyy]%	(id=34 Rain id=40 ET)
Season MaxSumDate	%season_maxsdate[id~ddmmyyyy~ddmmyyyy]%	(id=34 Rain id=40 ET)

### Days comparison over years

Season DayMinValue	*%season_daymin[id~ddmmyyyy~ddmmyyyy]%
Season DayMinValueDate	%season_daymind[id~ddmmyyyy~ddmmyyyy]%
Season DayMaxValue	*%season_daymax[id~ddmmyyyy~ddmmyyyy]%
Season DayMaxValueDate	%season_daymaxd[id~ddmmyyyy~ddmmyyyy]%
Season DayAvgMinValue	*%season_dayavgmin[id~ddmmyyyy~ddmmyyyy]%
Season DayAvgMinDate	%season_dayavgmind[id~ddmmyyyy~ddmmyyyy]%
Season DayAvgMaxValue	*%season_dayavgmax[id~ddmmyyyy~ddmmyyyy]%
Season DayAvgMaxDate	%season_dayavgmaxd[id~ddmmyyyy~ddmmyyyy]%
Season DayMinMaxValue	*%season_dayminmax[id~ddmmyyyy~ddmmyyyy]%
Season DayMinMaxVDate	%season_dayminmaxd[id~ddmmyyyy~ddmmyyyy]%
Season DayMinMaxVTime	%season_dayminmaxt[id~ddmmyyyy~ddmmyyyy]%
Season DayMaxMinValue	*%season_daymaxmin[id~ddmmyyyy~ddmmyyyy]%
Season DayMaxMinVDate	%season_daymaxmind[id~ddmmyyyy~ddmmyyyy]%
Season DayMaxMinVTime	%season_daymaxmint[id~ddmmyyyy~ddmmyyyy]%

For begin date and yyyy=0000 uses the program the settings for  
- sensor available since - or  
- recording begin - or  
- the year 1980 (if there is no other setting!)  
dd = 00 - the current day is automatically used for this.  
mm = 00 - the current month is used  
-> very easy to use with templatebegin (template line)

With DayMinMaxV as well as DayMaxMin and the start-day and end-day are different  
the program compares all days of the period = day-step, otherwise year-step

Peculiarity: %season\_dayminmax and %season\_dayminmaxd from V2.97.13

Season DayMinMaxValue	*%season_dayminmax[id~ddmmyyyy~ddmmyyyy]% for ID=35,45,38,41,42
Season DayMinMaxVDate	%season_dayminmaxd[id~ddmmyyyy~ddmmyyyy]% for ID=35,45,38,41,42

For Wind, Gust, Brightness, UV and Solarradiation is the minimal Max-value reported.

From V2.98.5 also possible

	*%Season_daymin[0~00000000~00000000]%
instead of	
Season DayMinValue	*%season_daymin[0~%ws_day2%%ws_month2%0000~%ws_day2%%ws_month2%0000]%
Season DayMinMaxValue	*%season_dayminmax[42~%ws_day2%%ws_month2%2003~%ws_day2%%ws_month2%0000]%
Season DayMinMaxVDate	%season_dayminmaxd[42~%ws_day2%%ws_month2%2003~%ws_day2%%ws_month2%0000]%

Season days %season\_days%

this variable reports days where are data available.

Only meaningful, if only one Season-Variable occurs in the line or only same time limits are used in a line!!

Season frost duration	%season_frostduration[%ws_season_monthyear[00~0000]%%]
Season frost duration	%season_frostduration[%ws_season_monthyear[00~-001]%%]
Season frost duration	%season_frostduration[01092007~31082010]%
Season frost duration	%ws_setmem[20]=%season_frostduration[%ws_season_monthyear[00~0000]%%]%%
Frost begin	%ws_instr=1~17~%ws_getmem[20]%%
Frost end	%ws_instr=23~17~%ws_getmem[20]%%

Frost duration %ws\_instr=41~20~%ws\_getmem[20]%%

Season dryness duration %season\_drynessduration[%ws\_season\_monthyear[00~0000]%%  
Season dryness duration %season\_drynessduration[%ws\_season\_monthyear[00~-001]%%  
Season dryness duration %season\_drynessduration[01092007~31082010]%%

Season frost duration %season\_frostduration[ddmmyyyy~ddmmyyyy]%%  
Season dryness duration %season\_drynessduration[ddmmyyyy~ddmmyyyy]%%

----- Monthly-/Yearly-interpretation over years as well as the set time period -----

Condition: **dd=32..35** = only same Months as well as Years are appraised  
**dd=32=avg; dd=33=max; dd=34=min; dd=35=avg** with current month/year # mm = 00=Year 01..12 Month  
For the end period (DDMMyyyy) the day as well as the month are ignored.

With this Monthly- as well as Yearly-interpretation also is allowed:

Season Ice days %season\_icedays[32000000~00000000]%% = **yearly-average-interpretation**  
here the average value is calculated with the data since data collecting begin until without current year  
Season Ice days %season\_icedays[32010000~00000000]%% = **average of all Januaries**  
here the average value is calculated with the data since data collecting begin until current year,  
if exactly the current month is January, this January is not taken into account!

With **dd=33 as well as dd=34** in the variable %season\_days% reports the corresponding year!

With **dd=32 as well as dd=35** in the variable %season\_days% reports the number of the taken into account years!

With **dd=32=avg and dd=34=min**, the current year as well as the current month doesn't take into account!

Season Ice days %season\_icedays[ddmmyyyy~ddmmyyyy]%%  
Season Frost days %season\_colddays[ddmmyyyy~ddmmyyyy]%%  
Season Cool days %season\_cooldays[ddmmyyyy~ddmmyyyy]%%  
Season Summer days %season\_warmdays[ddmmyyyy~ddmmyyyy]%%  
Season Hot days %season\_hotdays[ddmmyyyy~ddmmyyyy]%%  
Season days <= %season\_ulddays[ddmmyyyy~ddmmyyyy]%%  
Season days >= %season\_uhddays[ddmmyyyy~ddmmyyyy]%%  
Season days User3 %season\_u3days[ddmmyyyy~ddmmyyyy]%%  
Season days User4 %season\_u4days[ddmmyyyy~ddmmyyyy]%%  
Season days User5 %season\_u5days[ddmmyyyy~ddmmyyyy]%%  
Season trop nights %season\_tropndays[ddmmyyyy~ddmmyyyy]%%

Note: only whole months always becomes take into account!

Season frost grow days %season\_frostgrowdays[ddmmyyyy~ddmmyyyy]%%  
Season rain days %season\_raindays[ddmmyyyy~ddmmyyyy]%%  
Season Heatdegree days %season\_heatddays[ddmmyyyy~ddmmyyyy]%%  
Season Cooldegree days %season\_coolddays[ddmmyyyy~ddmmyyyy]%%  
Season Growdegree days %season\_growddays[ddmmyyyy~ddmmyyyy]%%  
Season XHeatdegree days %season\_xheatddays[ddmmyyyy~ddmmyyyy]%%

Season rain days %season\_raindaysx[ddmmyyyy~ddmmyyyy~vvvv]%%  
Season Growdegree days %season\_growddaysx[ddmmyyyy~ddmmyyyy~vvvv]%%  
Season days <= %season\_ulddaysx[ddmmyyyy~ddmmyyyy~vvvvN]%%  
Season days >= %season\_uhddaysx[ddmmyyyy~ddmmyyyy~vvvvN]%%  
Season days <= %season\_idldaysx[id~ddmmyyyy~ddmmyyyy~vvvvvN]%%  
Season days >= %season\_idhdaysx[id~ddmmyyyy~ddmmyyyy~vvvvvN]%%  
Season Period <= %season\_idldaypx[id~ddmmyyyy~ddmmyyyy~vvvvvN]%%  
Season Period >= %season\_idhdaypx[id~ddmmyyyy~ddmmyyyy~vvvvvN]%%

**N=Compare Typ:**

**A=Day-Averages-Value, L=Day-Min-Value, H=Day-Max-Value**

the compare value **vvvv** must be always 5 signs (example 00002; 003.5; -01.5 )!!!

**vvvv** is °C or mm !!! - other Units are not supported

With **season\_idhdaysx** or **season\_idldaysx** the set units are used! and the compare value vvvvvv must always have **6 signs** (for example 000002; 0003,5; -001,5 )!!

For **idhdaypx** or **idldaypx** and comparison type **"T"** the **Earliest day and the latest date of occurrence of this values reported**

But beware!

If you want to use this variable type for first/last frost day, Here only exactly this variable is supported **season\_idldaypx[0~ddmmyyyy~00000000~0000,0T]** - "00000000" must be used for the end date!

First/Last Frost Day            %season\_idldaypx[0~00000000~00000000~0000,0T]%

Example:

Season rain days            %season\_raindaysx[01012009~31122010~002.5]%  
 Season Growdegree days    %season\_growddaysx[01012009~31122010~012.5]%  
 Season days <=            %season\_uldaysx[01012009~31122010~-05.5A]%  
 Season days >=            %season\_uhdaysx[01012009~31122010~015.5A]%  
 Season days >=            %season\_idhdaysx[43~01012009~31122010~0016.5H]%  
 Season days >=            %season\_idhdaysx[33~01012009~31122010~1035.0H]%

First or last occurrence summer day:

Season Occurrence >=H      %season\_idhdaypx[0~00000000~00000000~0025,0T]%

First or last occurrence -10 ° C

Season Occurrence <=L      %season\_idldaypx[0~00000000~00000000~-010,0T]%

### Growing-temperature daily

Special case: here must be the comparison-value 00000, otherwise are the Growth-days calculated!

%templatebegin%%ws\_day2%.%ws\_month2 %season\_growddaysx[01012012~%ws\_day2%.%ws\_month2%.%ws\_year%~00000]%  
 Growing-temp with today    %season\_growddaysx[01010000~00000000~00000]% ... normally not correct!  
 Growing-temp without tod.   %season\_growddaysx[01010000~-1000000~00000]%

The season variables can be also worked off direct in the program

-> Weather, Weather forecast, Season\_var

and here you can store it in the ws\_store.cfg (variables store files).

You can freeing your system with this: during the work off of the customised user files.

Furthermore, **template\_season.txt** is anticipated specifically for it!

---

### List of the individual days - Variable should be only once in the line!

List Trop nights            %season\_l\_tropndays[01012005~31122018]%  
 List Trop nights            %season\_l\_tropndays[00000000~00000000]%

List Ice days                %season\_l\_icedays[ddmmyyyy~DDMMyyyy]%  
 List Frost days             %season\_l\_colddays[ddmmyyyy~DDMMyyyy]%  
 List Cool days              %season\_l\_cooldays[ddmmyyyy~DDMMyyyy]%  
 List Summer days          %season\_l\_warmdays[ddmmyyyy~DDMMyyyy]%  
 List Hot days                %season\_l\_hotdays[ddmmyyyy~DDMMyyyy]%  
 List Days <=                %season\_l\_uldays[ddmmyyyy~DDMMyyyy]%  
 List Days >=                %season\_l\_uhdays[ddmmyyyy~DDMMyyyy]%  
 List Frost grow days        %season\_l\_frostgrowdays[ddmmyyyy~DDMMyyyy]%

List Days <0 + >=25°C    %season\_l\_coldwarmdays[ddmmyyyy~DDMMyyyy]%  
 List Days <0 + >=20°C    %season\_l\_cold20warmdays[ddmmyyyy~DDMMyyyy]%  
 List Days <0 + >=15°C    %season\_l\_cold15warmdays[ddmmyyyy~DDMMyyyy]%  
 List Days <0 + >=10°C    %season\_l\_cold10warmdays[ddmmyyyy~DDMMyyyy]%  
 List Difference xx°C      %season\_l\_diffxxdays[xx~ddmmyyyy~ddmmyyyy]%    xx: 15-30°C

List Rain days              %season\_l\_raindays[ddmmyyyy~DDMMyyyy]%  
 List Rain days >2mm        %season\_l\_rain2days[ddmmyyyy~DDMMyyyy]%  
 List Rain days >5mm        %season\_l\_rain5days[ddmmyyyy~DDMMyyyy]%

List Rain days >10mm %season\_l\_rain10days[ddmmyyyy~DDMMyyyy]%  
 List Rain days >20mm %season\_l\_rain20days[ddmmyyyy~DDMMyyyy]%

List Days User3 %season\_l\_u3days[ddmmyyyy~DDMMyyyy]%  
 List Days User4 %season\_l\_u4days[ddmmyyyy~DDMMyyyy]%  
 List Days User5 %season\_l\_u5days[ddmmyyyy~DDMMyyyy]%

List Trop nights %season\_l\_tropndays[ddmmyyyy~ddmmyyyy]%

Season DayMinValue %season\_l\_daymin[id~ddmmyyyy~ddmmyyyy]%  
 Season DayMaxValue %season\_l\_Daymax[id~ddmmyyyy~ddmmyyyy]%  
 Season DayMinMaxValue %season\_l\_Dayminmax[id~ddmmyyyy~ddmmyyyy]%  
 Season DayMaxMinValue %season\_l\_Daymaxmin[id~ddmmyyyy~ddmmyyyy]%  
 Season DayAvgMinValue %season\_l\_Dayavgmin[id~ddmmyyyy~ddmmyyyy]%  
 Season DayAvgMaxValue %season\_l\_dayavgmax[id~ddmmyyyy~ddmmyyyy]%

List Days <= %season\_l\_uldaysx[ddmmyyyy~ddmmyyyy~vvvvvN]%  
 List Days >= %season\_l\_uhdaysx[ddmmyyyy~ddmmyyyy~vvvvvN]%  
 List Rain days %season\_l\_raindaysx[ddmmyyyy~ddmmyyyy~vvvvv]%

----- Store Variable in file and get it again -----

**xxx = 1 ... 999**  
 Remarks to var xxx %varstore\_writer[xxx~remark]%  
 Store in file %varstore\_write[xxx~text]%  
 Read from file %varstore\_read[xxx]%  
 Read from file %varstore\_readc[xxx]%  
 Read remarks from file %varstore\_readr[xxx]%  
 Remarks to var 9 %varstore\_writer[9~^season\_min[0~21122007~20032008]^]%  
 Store season data %varstore\_write[9~%season\_min[0~21122007~20032008]%]%  
 Read stored variable %varstore\_read[9]%

If you would like at %varstore\_writer[...]% to store a variable, replace the percent with "^" as well as the program makes this automatic for you.

If you would like to read this variable %varstore\_readr[...]% again, Wswin replaces the "^" with a percent and at work off of this reread variable it set the data with it.

You can use this for a dynamic updating.

-----Temperature / Humidity -----

outstemp + outshum:  
**Special feature of these variable: Purchase-sensor is here always the sensor which was chosen also for dew point**

Outside temp. %curval[0]% \*  
 Average value os temp %avgval[0]% \* at month\_only too  
 Min-value outside temp %minval[0]% \*  
 Min-time outside temp %mintime[0]%  
 Min-day/month outs-t. %mindaymonth[0]%  
 Max-value outside temp %maxval[0]% \*  
 Max-time outside temp %maxtime[0]%  
 Max-day/month outs-t. %maxdaymonth[0]%

Dew point extra %ws\_dewpoint[temp~hum]%  
 Dew point extra %ws\_dewpoint[16,0~60]%  
 Windchill extra %ws\_windchill[temp~wind]%

ApparentTemp %apparenttemp% \*  
 Heat Index Outdoor %heatindextemp% \*  
 Virtual Temperature %virtualtemp% \*  
 Wet bulb %wetbulbtemp% \*  
 SummerSimmerIndex %ws\_ssi% \*

ApparentTemp	%ws_apparenttemp[temp~hum~wind]%
Heat Index Outdoor	%ws_heatindextemp[temp~hum]%
Virtual Temperature	%ws_virtualtemp[temp~dewpoint~baro]%
Wet bulb	%ws_wetbulbtemp[temp~hum~baro]%
SummerSimmerIndex	%ws_ssix[temp~hum]%

with reference to day (not 24 hours)

Max-Outside temp day	%maxtempday% *
Time Max-Outsidetemp d	%maxtempdaytime%
Min-Outside temp day	%mintempday% *
Time Min-Outsidetemp d	%mintempdaytime%

Outside - humidity	%curvaloutshum%	
Average value os-hum	%avgval[-1]%	at month_only too
Min-value outside hum.	%minval[-1]%	
Min-time outside hum.	%mintime[-1]%	
Max-value outside hum.	%maxval[-1]%	
Max-time outside hum.	%maxtime[-1]%	

Grow sensor ID -5cm	%ws_growsensor-5cm_id%
Grow sensor ID	%ws_growsensor_id%

Grow temperature 14 o'clock	%growtemp14%
Outs. Humidity 14 o'clock	%relhum14%
Hours humidity >=90%	%hum90hour%

Grow temp. 14 o'clock	%growtemp14[dd~mm~yyyy]%
Outs. Humidity 14 o'clock	%relhum14[dd~mm~yyyy]%
Hours humidity >=90%	%hum90hour[dd~mm~yyyy]%

Variables only valid for week,month,year: (os=outside)

Min-value day os temp	%minvalday[0]% *	at month_only too - use only in template
Min-time day os temp	%mintimeday[0]%	at month_only too- use only in template
Min-day day os temp	%mindayday[0]%	at month_only too
Min-day day os tempsh.	%mindaydays[0]%	at month_only too
Max-value day os temp	%maxvalday[0]% *	at month_only too- use only in template
Max-time day os temp	%maxtimeday[0]%	at month_only too- use only in template
Max-day day os temp	%maxdayday[0]%	at month_only too
Max-day day os-tempsh.	%maxdaydays[0]%	at month_only too

Min-value day os hum	%minvalday[-1]%	at month_only too- use only in template
Min-time day os hum	%mintimeday[-1]%	at month_only too- use only in template
Min-day day os hum	%mindayday[-1]%	at month_only too
Max-value day os hum	%maxvalday[-1]%	at month_only too- use only in template
Max-time day os hum	%maxtimeday[-1]%	at month_only too- use only in template
Max-day day os hum	%maxdayday[-1]%	at month_only too

Mean MinTemp.	%ws_avgmintemp%	only at Week,Month,Year
Mean MaxTemp.	%ws_avgmaxtemp%	only at Week,Month,Year

Average MinTemp year	%ws_avgmintempyear%	
Average MaxTemp yaeer	%ws_avgmaxtempyear%	
Average MinTemp month	%ws_avgmintempmonth%	at month_only too
Average MaxTemp month	%ws_avgmaxtempmonth%	at month_only too

Temperature change (examples)

of the last 60 minutes	%tempchange[2]=60%
of the last 30 minutes	%tempchange[2]=30%
of the last 5 minutes	%tempchange[2]=5%

StandardTempDerivation	%ws_stdv%	<a href="#">with reference to current view/month</a>
StandardTempDerivation	%ws_stdvmonth%	<a href="#">with reference to month/month</a>

Std.TempDerivation y/m	%ws_STDV_year[mm~yyyy]%	covered on year / month
NormalTemperature	%ws_normaltemp%	at month_only too
Average Temp Month	%ws_avgtempmonth%	
Average Temp Month x	%ws_avgtempmonth[x]%	x=0..12, 0=year, 1..12=month
Examples:		
Average Temp Month x	%ws_avgtempmonth[%ws_month%]%	
Average Temp Month 01	%ws_avgtempmonth[1]%	
Average Temp Month 06	%ws_avgtempmonth[6]%	
Std.TempDerivation year	%ws_STDV_year%	with reference to current view/year
Std.TempDerivation year	%ws_STDVyear%	with reference to year/year
Std.TempDerivation y/m	%ws_STDV_year[mm~yyyy]%	covered on year / month
Std.TempDerivation M	%ws_STDV_yearmonth[mm~yyyy]%	covered until current month
Std.TempDerivation M	%ws_STDV_yearmonth[%ws_month2%~0000]%	
NormalTemperature year	%ws_normaltempyear%	
Average temp year	%ws_avgtempyear%	
Average temp year	%ws_avgtempmonth[0]%	
Ice days month	%ws_icedays_m%	at month_only too
Ice days month last year	%ws_ly_icedays_m%	
Cold days month	%ws_colddays_m%	at month_only too
Cold days month last year	%ws_ly_colddays_m%	
Summer days month	%ws_warmdays_m%	at month_only too
Summer days month last year	%ws_ly_warmdays_m%	
Hot days month	%ws_hotdays_m%	at month_only too
Hot days month last year	%ws_ly_hotdays_m%	
Ice days year	%ws_icedays_y%	
Ice days last year	%ws_ly_icedays_y%	
Cold days year	%ws_colddays_y%	
Cold days last year	%ws_ly_colddays_y%	
Summer days year	%ws_warmdays_y%	
Summer days last year	%ws_ly_warmdays_y%	
Hot days year	%ws_hotdays_y%	
Hot days last year	%ws_ly_hotdays_y%	
Tropic night days current	%ws_tropndays_y%	
Tropic night days last year	%ws_ly_tropndays_y%	
First cold day year	%firstcoldday%	Northern hemisphere = 2.semester
First cold day/time y.	%firstcolddaytime%	
Value 1. cold day year	%firstcolddayval%	
Last cold day year	%lastcoldday%	Northern hemisphere = 1.semester
Last cold day/time y.	%lastcolddaytime%	
Value last cold day-y	%lastcolddayval%	
1.grow frost day year	%firstgrowfrostday%	Northern hemisphere = 2.semester
1.grow frost daytime y	%firstgrowfrostdaytime%	
Value grow frostday y	%firstgrowfrostdayval%	
L. grow frost day year	%lastgrowfrostday%	Northern hemisphere = 1.semester
L. grow frost daytime y	%lastgrowfrostdaytime%	
Value l. growfrostday y	%lastgrowfrostdayval%	
Begin last frost day	%ws_lasticedaystart%	
Begin last frost day time	%ws_lasticedaystartt%	
Begin last frost day date	%ws_lasticedaystartd%	
Date last frost day	%ws_lasticeday%	
Date last frost day:time	%ws_lasticedayt%	
Date last frost day:date	%ws_lasticedayd%	

Duration frost time	%ws_iceday_duration%	
Duration frost time (short)	%ws_iceday_durations%	
Duration frost time	%ws_iceday_duration[x]% #	
Duration frost time (short)	%ws_iceday_durations[x]% #	
Customised limit value <=		
Limit value <=	%ws_uldaysvalue%	
Text <=	%ws_uldaystext%	
Days month <=	%ws_uldays_m%	at month_only too
Days year <=	%ws_uldays_y%	
UserLow month last year	%ws_ly_uldays_m%	at month_only too
UserLow last year	%ws_ly_uldays_y%	
Customised limit value >=		
Limit value >=	%ws_uhdaysvalue%	
Text >=	%ws_uhdaystext%	
Days month >=	%ws_uhdays_m%	at month_only too
Days year >=	%ws_uhdays_y%	
Userhigh month lastyear	%ws_ly_uhdays_m%	at month_only too
Userhigh last year	%ws_ly_uhdays_y%	
User defined limit value 3		
Limit Value U3	%ws_u3daysvalue%	
Text U3	%ws_u3daystext%	
Days month U3	%ws_u3days_m%	at month_only too
Days year U3	%ws_u3days_y%	
User defined limit value 4		
Grenz-Wert U4	%ws_u4daysvalue%	
Text U4	%ws_u4daystext%	
Days month U4	%ws_u4days_m%	at month_only too
Days year U4	%ws_u4days_y%	
User defined limit value 5		
Grenz-Wert U5	%ws_u5daysvalue%	
Text U5	%ws_u5daystext%	
Days month U5	%ws_u5days_m%	at month_only too
Days year U5	%ws_u5days_y%	
Mod SolarSensor Temp	%ws_msolars%	
Mod SolarSensor Prozent	%ws_msolarsproz%	
Heatdegreedays Basic		
Heatdegreedays Month	%heatdegreedaysmonth%	at month_only too
Heatdegreedays Year	%heatdegreedaysyear%	
Heatdegreedays Day	%heatdegreedaysday%	
Cooldegreedays Basic		
Cooldegreedays Month	%cooldegreedaysmonth%	at month_only too
Cooldegreedays Year	%cooldegreedaysyear%	
Cooldegreedays Day	%cooldegreedaysday%	
Growingdegreedays Basic		
Growingdegreedays Month	%growdegreedaysmonth%	at month_only too
Growingdegreedays Year	%growdegreedaysyear%	
Growingdegreedays Day	%growdegreedaysday%	
X-Heatdegreedays Basic		
X-Heatdegreedays Month	%xheatdegreedaysmonth%	at month_only too

X-Heatdegreedays Year	%xheatdegreedaysyear%
X-Heatdegreedays Day	%xheatdegreedaysday%
Growing temperature	%growingtemp%
Growing temperat date	%growingtempdate%
Ice Sum	%icesum%
Thermal Sum	%warmsum%
Value Thermal Sum	%warmsumvalue%
Thermal stress index	%thermicstress%
PMV Graphic	%thermicstressgif%
Thermal stress (wo val)	%thermicstress_nv%
Thermal stress (wo val)	%thermicstress_nv[x]% #
Thermal stress only val	%thermicstress_value%

----- Pressure -----

Barometric tendency 1h	%ws_baro1h%
Barometric tendency 2h	%ws_baro2h%
Barometric tendency 3h	%ws_baro3h%
Barometric tendency 6h	%ws_baro6h%
Barometric tendency 12h	%ws_baro12h%
Barometric tendency 24h	%ws_baro24h%
Station air pressure	%baro_station% *

with reference to day (not 24 hours)

Max air pressure day	%maxbaroday%
Time Max air pressure day	%maxbarodaytime%
Min air pressure day	%minbaroday%
Time Min air pressure day	%minbarodaytime%

only at day and 24h view relevant:

max. Baro changes 1h	%ws_maxbaro1h%
max. baro changes 24h	%ws_maxbaro24h%

Barometric tendency icon 6h	%ws_baro_icon%
Barometric tendency3h icon	%ws_baro3h_icon%

Barometric tendency text	%ws_barotendencytxt%
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current vapor pressure	%vaporpressurcur%
max. vapor pressure	%vaporpressurmax%

current mix ratio	%mixratiocur%
max mix ratio	%mixratiomax%

air density	%airdensity%
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----- Wind -----

Winddirection graphic	%windd_gra%	
Windd.graph w. range	%winddrange_gra%	
Winddir graphic 10°	%windd10_gra%	-> wind_00.gif, wind_01.gif ... wind_36.gif
Wind dir graphics 22,5°	%windgd22_gra%	-> wind00.gif, wind01.gif ... wind16.gif 00=N,01=N-NE

Dom. Wind direction	%domwind_txt%	Dominating wind direction in the selected View
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Dom. Wind direction	%domwind_txt[x]% #		
Dom. Wind direction	%curminmaxhour[3,1,36]%		
Wind direction text	%wind_txt%	at month_only too	
Windd.text wo +-22.5°	%wind_txtonly%	at month_only too	(only ELV/La Crosse)
Windd.text wo +-22.5°	%wind_txtonly[x]% #%	at month_only too	(only ELV/La Crosse)

Wind range	%wind_range%	0=0°, 1=22.5°, 2=45°, 3=67.5°
Wind direction text long	%wind_txtlong%	
Wind direction text long	%wind_txtlong[x]% #	
WindMaxText	%windmax_txt%	(Direction for max Wind)
WindMaxText	%windmax_txt[x]% #	(Direction for max Wind)
Create wind dir text	%makewind_txt[v]% %makewind_txtlong[v]% %makewind_txt[%avgval[36]%%] %makewind_txt[6 °]%	v = 0..360
only VantagePro (Weatherlink) Gust		
Wind direction graphic	%windgd_gra%	
Winddir graphic 22,5°	%windgd22_gra%	-> wind00.gif, wind01.gif ... wind16.gif 00=N,01=N-NE
Dom. Winddirection	%domwindg_txt%	Dominating gust wind direction in the selected View
Dom. Winddirection	%domwindg_txt[x]% #	
Wind dir gust	%windg_value%	
Wind direction text	%windg_txt%	at month_only too
Wind direction text	%windg_txt[x]% #	at month_only too
Wind direction text long	%windg_txtlong%	at month_only too
Wind direction text long	%windg_txtlong[x]% #	at month_only too
only WMxxx and VantagePro (Weatherlink):		
Wind gust direction text	%windgmax_txt%	at month_only too
Wind gust direction text	%windgmax_txt[x]% #	
with reference to day (not 24 hours)		
Max wind day	%maxgustday%	
Time Max wind day	%maxgustdaytime%	
10min avg wind dir	%avg10minwinddir%	
10min avg wind dir txt	%avg10minwinddir_txt%	
10min avg. Wind	*%avg10minwind%	
10min avg. Wind kts	%avg10minwindkts%	
10min avg wind gust	*%avg10minwindg%	
10min avg wind gust kts	%avg10minwindgkts%	
1min avg. Wind	*%avg1minwind%	
2min avg. Wind	*%avg2minwind%	
Current Wind in kts	%windkts%	
Current Wind gust in kts	%windgkts%	
Current Wind in m/s	%windms%	
Current wind gust in m/s	%windgms%	
With reference to day (not 24 hours)		
Max Wind in m/s	%windmaxms%	
Max Wind gust in m/s	windgmaxms%	
Max Wind in knots	windmaxkts%	
Max Wind gust in knots	%windgmaxkts%	
CurrWind in Bft	%windbft%	
CurrWindgust in Bft	%windgbft%	
MinValueWind in Bft	%minwindbft%	at month_only too
MaxValueWind in Bft	%maxwindbft%	at month_only too
AverageValue Wind Bft	%avgwindbft%	at month_only too
MinValueGust in Bft	%minwindgbft%	at month_only too
MaxValueGust in Bft	%maxwindgbft%	at month_only too
AverageValue Gust Bft	%avgwindgbft%	at month_only too
Text Wind in Bft	%textwindbft%	

Text Windgust in Bft	%textwindgbft%	
Text Wind in Bft	%textwindbft[x]% #	
Text Windgust in Bft	%textwindgbft[x]% #	
Sensor available+Html	%ws_available[45]=Yes,No%	
Wind run view	%windrun_cur%	
Wind run month	%windrun_month%	at month_only too
Wind run year	%windrun_year%	
Wind calm values	%wind_calm%	
Wind calm in %	%wind_calmproz%	
DistributionWD% Values	%winddirproz_value%	
DistributionWD% N-NE	%winddirproz_NNE%	
DistributionWD% NE	%winddirproz_NE%	
DistributionWD% NE-E	%winddirproz_NEE%	
DistributionWD% E	%winddirproz_E%	
DistributionWD% E-SE	%winddirproz_ESE%	
DistributionWD% SE	%winddirproz_SE%	
DistributionWD% SE-S	%winddirproz_SES%	
DistributionWD% S	%winddirproz_S%	
DistributionWD% S-SW	%winddirproz_SSW%	
DistributionWD% SW	%winddirproz_SW%	
DistributionWD% SW-W	%winddirproz_SWW%	
DistributionWD% W	%winddirproz_W%	
DistributionWD% W-NW	%winddirproz_WNW%	
DistributionWD% NW	%winddirproz_NW%	
DistributionWD% NW-N	%winddirproz_NWN%	
DistributionWD% N	%winddirproz_N%	
only VantagePro (Weatherlink)		
Calm Values	%windg_calm%	
Wind Calm in %	%windg_calmproz%	
DistributionWD% Werte	%windgdirproz_value%	
DistributionWD% N-NE	%windgdirproz_NNE%	
DistributionWD% NE	%windgdirproz_NE%	
DistributionWD% NE-E	%windgdirproz_NEE%	
DistributionWD% E	%windgdirproz_E%	
DistributionWD% E-SE	%windgdirproz_ESE%	
DistributionWD% SE	%windgdirproz_SE%	
DistributionWD% SE-S	%windgdirproz_SES%	
DistributionWD% S	%windgdirproz_S%	
DistributionWD% S-SW	%windgdirproz_SSW%	
DistributionWD% SW	%windgdirproz_SW%	
DistributionWD% SW-W	%windgdirproz_SWW%	
DistributionWD% W	%windgdirproz_W%	
DistributionWD% W-NW	%windgdirproz_WNW%	
DistributionWD% NW	%windgdirproz_NW%	
DistributionWD% NW-N	%windgdirproz_NWN%	
DistributionWD% N	%windgdirproz_N%	
Wind number values	%wind_values%	
Wind force 0Bft in %	%windbftproz_0%	
Wind force 1Bft in %	%windbftproz_1%	
Wind force 2Bft in %	%windbftproz_2%	
Wind force 3Bft in %	%windbftproz_3%	
Wind force 4Bft in %	%windbftproz_4%	
Wind force 5Bft in %	%windbftproz_5%	
Wind force 6Bft in %	%windbftproz_6%	
Wind force 7Bft in %	%windbftproz_7%	

Wind force 8Bft in %	%windbftproz_8%
Wind force 9Bft in %	%windbftproz_9%
Wind force 10Bft in %	%windbftproz_10%
Wind force 11Bft in %	%windbftproz_11%
Wind force>=12Bft in%	%windbftproz_12%

Wind force Gust (only valid for WM-918, WMR-9x8, VantagePro)

Wind number values	%windg_values%
Wind force 0Bft in %	%windgbftproz_0%
Wind force 1Bft in %	%windgbftproz_1%
Wind force 2Bft in %	%windgbftproz_2%
Wind force 3Bft in %	%windgbftproz_3%
Wind force 4Bft in %	%windgbftproz_4%
Wind force 5Bft in %	%windgbftproz_5%
Wind force 6Bft in %	%windgbftproz_6%
Wind force 7Bft in %	%windgbftproz_7%
Wind force 8Bft in %	%windgbftproz_8%
Wind force 9Bft in %	%windgbftproz_9%
Wind force 10Bft in %	%windgbftproz_10%
Wind force 11Bft in %	%windgbftproz_11%
Wind force>=12Bft in%	%windgbftproz_12%

State of sea (Text)	%seaforce%
State of sea (Text)	%seaforce[x]% #
Sea graphic	%sea_gif%

----- Rain -----

Rain resolution	%ws_rainresolution%	
Rain 1h	%rain1h%	
Rain 24h	*%rain24h%	
Rain day	*%rainday%	
Rain week	*%rainweek%	
Rain month	*%rainmonth%	at month_only too
Rain year	*%rainyear%	
Rain rate /hour it's raining	*%rainrate% %raining%	
Rain last hour	%curminmaxhour[4,1,34]%	
Rain last 3 hours	%curminmaxhour[4,3,34]%	
Rain yesterday	%avgvalpast[34~-1~00~0000]%	*
Rain days year	%raindays%	
Rain days year	%raindaysmonth[0]%	look below too ...
Rain days last year	%raindaysmonthly[0]%	look below too ...
Rain Last Month	%rainlastmonth%	
Rain Last Month Year	%rainlastmonthyear%	(Rain last year same month)
Rain Last Year	%rainlastyear%	
Rain days >0mm month	%rain0month%	at month_only too
Rain days >2mm month	%rain2month%	at month_only too
Rain days >5mm month	%rain5month%	at month_only too
Rain days >10mm month	%rain10month%	at month_only too
Rain days >20mm month	%rain20month%	at month_only too
Rain days >0mm year	%rain0year%	
Rain days >2mm year	%rain2year%	
Rain days >5mm year	%rain5year%	
Rain days >10mm year	%rain10year%	

Rain days >20mm year	%rain20year%	
Rain days month x	%raindaysmonth[x]%	x=0..12, 0=year, 1..12=month
Rain days last year/month	%raindaysmonthly[x]%	x=0..12, 0=year, 1..12=month
Rain days 2 mm y/month	%rain2daysmonth[%ws_month%]%	%ws_month%=x=0..12, 0=year, 1..12=month
Rain days 5 mm y/month	%rain5daysmonth[%ws_month%]%	%ws_month%=x=0..12, 0=year, 1..12=month
Rain days 10mm y/month	%rain10daysmonth[%ws_month%]%	%ws_month%=x=0..12, 0=year, 1..12=month
Rain days 20mm y/month	%rain20daysmonth[%ws_month%]%	%ws_month%=x=0..12, 0=year, 1..12=month
Normal Rain	%ws_normalrain%	at month_only too
Normal Rain year	%ws_normalrainyear%	
StandardRainDerivation	%ws_RainSTDV%	at month_only too
Std.RainDerivation year	%ws_rainSTDV_year%	
Std.RainDerivation y/m	%ws_rainstdv_year[mm~yyyy]%	
StandardRainDerivation	%ws_RainSTDV_proz%	at month_only too
Std.RainDerivation year	%ws_rainSTDV_year_proz%	
Std.RainDerivation y/m	%ws_rainSTDV_year_proz[mm~yyyy]%	
Std.Rain DV year value	%ws_rainSTDVx_year%	
Std.Rain Derivation val	%ws_rainSTDVx%	
<b>covered on actual days in the year/month:</b>		
Std.Rain DV year	%ws_rainSTDVx_year_proz%	
Std.Rain Deviation	%ws_rainSTDVx_proz%	at month_only too
Rain reference 0 mm	%rain0value%	
Rain reference 2 mm	%rain2value%	
Rain reference 5 mm	%rain5value%	
Rain reference 10 mm	%rain10value%	
Rain reference 20mm	%rain20value%	
Date last rain	%ws_lastrain%	
last Rain: only time	%ws_lastraint%	
last Rain: only date	%ws_lastraind%	
without rain since	%ws_desert_duration%	
without rain since (short)	%ws_desert_durations%	
without rain since	%ws_desert_duration[x]#	
without rain since (short)	%ws_desert_durations[x]#	
without rain days	%ws_desert_days%	
These values are calculated by the software:		
Evapotranspiration day	*%ws_evapotrans_day%	
Evapotransp. month	*%ws_evapotrans_month%	at month_only too
Evapotransp. year	*%ws_evapotrans_year%	
ET for single days	*%ws_evapotransdays%	only for template und month/year
ET VantagePro/Weatherlink:		
ET day Vantage	*%ws_evapotransvt_day%	
ET week VantagePro	*%ws_evapotransvt_week%	
ET month VantagePro	*%ws_evapotransvt_month%	
ET year VantagePro	*%ws_evapotransvt_year%	
----- Time sensor -----		
Time sensor day time short	%t_sensday_s%	
Time sensor week time short	%t_sensweek_s%	
Time sensor month time short	%t_sensmonth_s%	at month_only too
Time sensor year time short	%t_sensyear_s%	
Time sensor 24h time	%t_sensday24h%	
Time sensor day time	%t_sensday%	

Time sensor week time	%t_sensweek%	
Time sensor month time	%t_sensmonth%	at month_only too
Time sensor year time	%t_sensyear%	
Time sensor 24h time dec	%t_sensday24h_d%	
Time sensor day time dec	%t_sensday_d%	
Time sensor week time dec	%t_sensweek_d%	
Time sensor month time dec	%t_sensmonth_d%	at month_only too
Time sensor year time dec	%t_sensyear_d%	
Time sensor X-day	%t_sensdaypast[dd~mm~yyyy]%	
Time sensor last hour	%curminmaxhour[4,1,39]%	
Time sensor last 3 hours	%curminmaxhour[4,3,39]%	

----- Variables only for VantagePro -----

Firmware Date	%ws_firmwarevt%
Date start storm rain	%ws_datestormrain%
Value storm rain	*%ws_valstormrain%
Rain rate/hour	*%ws_rainrateh%
Battery Console	%ws_batteryvt%
Bat-State Reciever 8..1	%ws_batteryreceivvt%
Total receiving in %	%ws_receiveprosvt%
Numbers total packets	%ws_totalpacketsvt%
Numbers missing packets	%ws_mispacketsvt%
Numbers packets in row	%ws_rowpacketsvt%
Numbers Resync	%ws_resyncvt%
Numbers CRC Errors	%ws_crcerrorsvt%

----- Other -----

CallSign-ID APRS	%ws_aprs_callid%
Aprsline1	%ws_aprsitem1%
Aprsline2	%ws_aprsitem2%

**The value in the angular clamp declares the number of values. Allowed area 1-99  
Normally necessary is the 24-hours view!**

Array Temperature	%ws_arraytemp[10]%	in °C - 10 values
Array Humidity	%ws_arrayhum[20]%	in % - 20 values
Array Barometer	%ws_arraybaro[10]%	in hPa
Array Rain	%ws_arrayrain[10]%	in mm
Array Wind	%ws_arraywind[10]%	in Knots
Array Gust	%ws_arraygust[10]%	in Knots
Array Winddirection	%ws_arraywinddir[20]%	in Grad
Array indoor temp	%ws_arraytempin[10]%	in °C - 10 values
Array indoor hum	%ws_arrayhumin[10]%	in % - 10 values
60 Min Array	%ws_array60min[xx]%	<b>xx=-1...46</b>
24 hrs Array Temp	%ws_arraytemp24h%	20 values
24 hrs Array Humidity	%ws_arrayhum24h%	20 values
24 hrs Array Barometer	%ws_arraybaro24h%	20 values
24 hrs Array Rain	%ws_arrayrain24h%	20 values
24 hrs Array Wind	%ws_arraywind24h%	20 values in Knots
24 hrs Array UV	%ws_arrayuv24h%	20 values
24 hrs Array Solar	%ws_arraysolar24h%	20 values
24 hrs Array Time	%ws_arraytime24h%	20 values
24 hrs Array Winddir	%ws_arraywindd24h%	20 values
24 hrs Array Hum	%ws_arrayhum24h%	24 values
24 hrs Array tempIndoor	%ws_arraytempin24h%	24 values
24 hrs Array hum Indoor	%ws_arrayhumin24h%	24 values

24 hrs Array Temp	%ws_arraytemp4h%	4 values
24 hrs Array Barometer	%ws_arraybaro4h%	4 values
24 hrs Array Rain	%ws_arrayrain4h%	4 values
24 hrs Array Wind	%ws_arraywind4h%	4 values - in Knots
24 hrs Array UV	%ws_arrayuv4h%	4 values
24 hrs Array Solar	%ws_arraysolar4h%	4 values
24 hrs Array Time	%ws_arraytime4h%	4 values
24 hrs Array Winddir	%ws_arraywindd4h%	4 values
Week Array Rain *10	%ws_arrayrainweek%	
31 day Array Temp Max	%ws_arraytempmax31d%	
31 day Array Temp Min	%ws_arraytempmin31d%	
31 day Array Rain	%ws_arrayrain31d%	
31 day Array Barometer	%ws_arraybaro31d%	
31 day Array Wind	%ws_arraywind31d%	in Knots
31 day Array Wind dir	%ws_arraywinddir31d%	
31day Array Humidity	%ws_arrayhum31d%	
12 month Array Rain	%ws_arrayrain12m%	
12 month Array Rain WDL	%ws_arrayrain12m_wl%	for WDLive
Day Array	*%ws_xarraydxx[id~s~a~ddd]% id = -1..46 s = Separator (for example " " ", ";" ) -> 1 Char! a = 0 ->Average a = 1 ->Minimum a = 2 ->Maximum a = 3 ->Date a = 4 ->Sum only valid for ID 34,37,38,39,40 a = 5 ->Min Time a = 6 ->Max Time a = 7 ->Average of the Average over Days a = 8 ->Minimum Average over Days a = 9 ->Maximum Average over Days ddd = 000->031 Days, 001...400 Days backwards	
Month Array	*%ws_xarraymxx[id~s~a~dd]% id = -1..46 s = Separator (for example " " ", ";" ) -> 1 Char! a = 0 ->Average a = 1 ->Minimum a = 2 ->Maximum a = 3 ->Year_Month a = 4 ->Sum only valid for ID 34,37,38,39,40 a = 5 ->Min Date_Time a = 6 ->Max Date_Time a = 7 ->Average of the Average over Month a = 8 ->Minimum Average over Month a = 9 ->Maximum Average over Month dd = 0->12 Month, 1..36 Month backwards	
Weather forecast text	%forecast_txt%	
Weather forecast text	%forecast_txt[x]% #	
Weather forecast icon	%forecast_icon%	
Weather forecast Vantage	%forecast_vant%	
Weather forecast Vantage	%forecast_vant[x]% #	
Weather forc Vantage long	%forecast_vant_long%	-> for speech output
Weather forecast number	%forecast_number%	0=not specified, 1..12
Weather forecast n. Vantage	%forecast_number_vant%	-1=not specified, 0..196

Own weather forecast text:		
Weather forecast text1	%forecast_txt1%	
Weather forecast text2	%forecast_txt2%	
Weather forecast text3	%forecast_txt3%	
Weather comment from WA	%wa_comment%	
Own text 1	%ws_own_txt1%	
Own text 2	%ws_own_txt2%	
Own text 3	%ws_own_txt3%	
Own text 4	%ws_own_txt4%	
Own text 5	%ws_own_txt5%	
Own text 6	%ws_own_txt6%	
Ice warning graphic	%icewarning%	(-> ice.gif or no_ice.gif)
Ice warning text	%icewarningtxt%	
Ice warning text	%icewarningtxt[x]% #	
Ice warning?	%ws_icewarning=Yes,No%	
State DCFSynchron	%ws_dcfsynchron%	
State DCFSynchron	%ws_dcfsynchroncolor%	
Current Week Graphic	%ws_weekgif%	(take yearly separation into account, if chosen)
Current Month Graphic	%ws_monthgif%	(take yearly separation into account, if chosen)
Last Week Graphic	%ws_lweekgif%	(take yearly separation into account, if chosen)
Last Month Graphic	%ws_lmonthgif%	(take yearly separation into account, if chosen)
Year folder	%ws_yearfolder%	(= for example "2003/")
Moon rise	%ws_moonrise%	
Moon transit	%ws_moontransit%	
Moon set	%ws_moonset%	
Moon age	%ws_moonage%	
Moon age	%ws_moonage[x]% #	
Moon phase	%ws_moonphase%	
Moon phase without %	%ws_moonphased%	
Mond phase without +/-%	%ws_moonphasev%	
Julian Date	%ws_juliandate%	
Eastern	%ws_easterdate%	
Spring Equinox	%ws_spring%	
Summer Solstice	%ws_summer%	
Autumn Equinox	%ws_autumn%	
Winter Solstice	%ws_winter%	
Moon distance	%ws_moondistance%	
Moon subtends	%ws_moonsubtend%	
Last Lutation	%ws_lastlutation%	
Next Lutation	%ws_nextlutation%	
Next perigee	%ws_nextperigee%	
Next apogee	%ws_nextapogee%	
Next moon eclipse	%ws_mooneclipse%	
Moon position Azimut	%ws_moonpos_az%	
Moon position Azimutabs	%ws_moonpos_abs_az%	
Moon position Elevation	%ws_moonpos_el%	
Moon pos Elev>0(night)	%ws_moonpos_el_g0%	
Moon high elv position	%ws_moonpos_high_el%	
Moon rise Az abs	%ws_moonrise_pos_abs_az%	
Moon set Az abs	%ws_moonset_pos_abs_az%	
Moon rise Az	%ws_moonrise_pos_az%	
Moon set Az	%ws_moonset_pos_az%	

Sun distance	%ws_sundistance%
Sun subtends	%ws_sunsubtend%
Next perihelion	%ws_nextperihel%
Next aphelion	%ws_nextaphel%
Next sun eclipse	%ws_suneclipse%
Next new moon	%ws_moonnew%
Next full moon	%ws_moonfull%
Next first moon quart.	%ws_moonfirstq%
Next last moon quart.	%ws_moonlastq%
Moon phase graphic	%ws_moongif%
Moongraph first quarter	%ws_fq_moongif%
Moongraph last quarter	%ws_lq_moongif%
Sun rise	%ws_sunrise%
Sun transit	%ws_suntransit%
Sun set	%ws_sunset%
Sun rise yesterday	%ws_sunriseyest%
Sun rise tomorrow	%ws_sunrisetomo%
Sun set tomorrow%	ws_sunsettomo%
Info moon/sun	%ws_infomoonsun%
Info moon/sun	%ws_infomoonsun[x]% #
Sun rise x-day	%ws_sunrise[dd~mm~yyyy]%
Sun set x-day	%ws_sunset[dd~mm~yyyy]%
Sun rise with day x-day	%ws_sunrised[dd~mm~yyyy]%
Sun set with day x-day	%ws_sunsetd[dd~mm~yyyy]%
Morning twinl. civil	%ws_suntwinrisecivil%
Evening twinl. civil	%ws_suntwinsetcivil%
Morning twinl. nautic.	%ws_suntwinrisenaut%
Evening twinl. autic.	%ws_suntwinsetnaut%
Morning twinl. astron.	%ws_suntwinriseastro%
Evening twin.. astron.	%ws_suntwinsetastro%

above-mentioned variables contain so-called "hard HTML-spaces" (&nbsp;), not in a Template line, or if previously in a line with %templatebegin% at the beginning and without variables uses!

Daylight saving start	%ws_summertimestart%	
Daylight saving end	%ws_summertimeend%	
Length of Day (Sun)	%ws_daylength%	
Day length long	%ws_daylengthlong%	for speech output
Sun position Azimut	%ws_sunpos_az%	
Sun position Elevation	%ws_sunpos_el%	
Sun position Elev>0(Day)	%ws_sunpos_el_g0%	Edition only on daylight - else „“
Sun high elv position	%ws_sunpos_high_el%	
Sun rise pos Az abs	%ws_sunrise_pos_abs_az%	
Sun set pos Az abs	%ws_sunset_pos_abs_az%	
Longitude	%ws_longitude%	
Longitude-Text	%ws_longitudetxt%	
Longitude-Text short	%ws_longitudetxts%	
Longitude as value	%ws_longitudevalue%	->. 01349.20E
Latitude	%ws_latitude%	
Latitude-Text short	%ws_latitudetxts%	
Latitude-Text	%ws_latitudetxt%	
Latitude as value	%ws_latitudevalue%	-> 4845.20N

Snow depth/height	%snowheight%	
Entry snow date	%nowdate%	(date when the snow depth was entered)
Snow-line	%snowline%	
Cloud limit	%cloudline%	
Horizont view (app.)	%horiz_view%	
Day State	%ws_isdaynight=Day,Morning twilight,Evening tiwlight, Night%	
Normal temperature	%ws_normaltemp[%ws_month]%	ws_month=0..12, 0=year, 1..12=month
Normal rain	%ws_normalrain[%ws_month]%	ws_month=0..12, 0=year, 1..12=month
Normal sun time	%ws_normalsun[%ws_month]%	ws_month=0..12, 0=year, 1..12=month
UV text	%ws_uvtext%	-> none, minimal, low, moderate, high, veryhigh
Calculate possible max values:		
current sun radiation	%sunintenscur%	
max sun radiation	%sunintensmax%	
value for sunshine time	%sunstart%	
value for sunshine time lux	%sunstartlux%	
Calculation Lux->W/m <sup>2</sup>	%ws2500luxwm2%	
Alternate calcLux->W/m <sup>2</sup>	%ws2500luxwm2altern%	
Current Lux-value	%dyncurlux%	
Current Sun rad value	%curval[38]%	
For cloudiness/sun in percent, chooses corresponding humidity sensor of the modified Temp sensor		
Cloudness (Sun) in text	%suntxt%	
Cloudness (Sun) in text	%suntxt[x]#	
day sun time shortly	%sunday_s%	
Sun/Clouds l. hour text	%sun1htxt%	
Sun/Clouds l. hour text	%sun1htxt[x]#	
Sun/Clouds last hour	%sun1hproz%	
Sun/Clouds eighth	%suneighth%	
week sun time shortly	%sunweek_s%	
month sun time shortly	%sunmonth_s%	at month_only too
year sun time shortly	%sunyear_s%	
day sun time 24h	%sunday24h%	
day sun time	%sunday%	
week sun time	%sunweek%	
month sun time	%sunmonth%	at month_only too
year sun time	%sunyear%	
sun time from WS2500	%sundayws2500%	
day sun time 24h dec	%sunday24h_d%	
day sun time dec	%sunday_d%	
week sun time dec	%sunweek_d%	
month sun time dec	%sunmonth_d%	at month_only too
year sun time dec	%sunyear_d%	
Sun time day x-day	%sundaypast[dd~mm~yyyy]%	
Example sun time x-day	%ws_timetoval[%sundaypast[00~00~-001] ]%	
StandardSunDerivation	%ws_sunSTDV%	at month_only too
Std.SunDerivation year	%ws_sunSTDV_year%	
Std.SunDerivation y/m	%ws_sunSTDV_year[mm~yyyy]%	
Std.SunDer. in proz	%ws_sunSTDV_proz%	at month_only too
Std.SunDer year in pro	%ws_sunSTDV_year_proz%	
Std.SunDerivation y/m	%ws_sunSTDV_year_proz[mm~yyyy]%	

Normal sun time	%ws_normalsun%	at month_only too
Normal sun time year	%ws_normalsunyear%	
UV text	%ws_uvtext%	-> none, minimal, low, moderate, high, veryhigh

covered on actual days in the year/month:

Std.SunDerivation year	%ws_sunSTDVx_year_proz%
Std.Sun Derivation	%ws_sunSTDVx_proz%

Sun graphics	%sungif%
	sdark.gif, shazy.gif, sstcloudy.gif, scloudy.gif, sslcloudy.gif, ssunny.gif

**only valid for VantagePro and solar sensor available!**

Sum solar x-day	%avgvalpast[38-dd-mm~yyyy]%
Sum x-m/y	%avgval_mpast[38~mm~yyyy]%
Min-Sum month/year	%avgmin_mpast[38~mm~yyyy]%
Min-Sum date m/y	%avgmindate_mpast[38~mm~yyyy]%
Max-Sum month/year	%avgmax_mpast[38~mm~yyyy]%
Max-Sum date m/y	%avgmaxdate_mpast[38~mm~yyyy]%

Solar energy	%solarenergy_mpast[mm~yyyy]%
Solar profit	%solarprofit_mpast[mm~yyyy]% Euro or Dollar or

Solar ernergy	%solarenergy_mpast[00~2010]%
Solar profit	%solarprofit_mpast[00~2010]% Euro or Dollar or

-----  
**Long time values:**

Sensor available %ws\_available[T1]=Yes,No%

MinTemperature	%LT_TempMin%
Date MinTemperature	%LT_TempMinDate%
Time MinTemperature	%LT_TempMinTime%
MaxTemperature	%LT_TempMax%
Date MaxTemperature	%LT_TempMaxDate%
Time MaxTemperature	%LT_TempMaxTime%

Sensor available %ws\_available[T2]=Yes,No%

MinTemperature 2	%LT_Temp2Min%
Date MinTemperature 2	%LT_Temp2MinDate%
Time MinTemperature 2	%LT_Temp2MinTime%
MaxTemperature 2	%LT_Temp2Max%
Date MaxTemperature 2	%LT_Temp2MaxDate%
Time MaxTemperatuer 2	%LT_Temp2MaxTime%

MinAir pressure	%LT_BaroMin%
Date MinAir pressure	%LT_BaroMinDate%
Time MinAir pressure	%LT_BaroMinTime%
MaxAir pressure	%LT_BaroMax%
Date MaxAir pressure	%LT_BaroMaxDate%
Time MaxAir pressure	%LT_BaroMaxTime%
MaxChange pressure 1h	%LT_BaroMax1h%
Date MaxChange pr. 1h	%LT_BaroMax1hDate%
MaxChange pressure day	%LT_BaroMaxDay%
Date MaxChange pr. day	%LT_BaroMaxDayDate%
MaxChange pressure 24h	%LT_BaroMax24h%
Date MaxChange pr. 24h	%LT_BaroMax24hDate%

Max Wind	%LT_WindMax%
Date Max Wind	%LT_WindMaxDate%
Time Max Wind	%LT_WindMaxTime%

Max Gust	%LT_GustMax%
----------	--------------

Date Max Gust	%LT_GustMaxDate%	
Time Max Gust	%LT_GustMaxTime%	
Max Rain/Day	%LT_RainDayMax%	
Date Max Rain/Day	%LT_RainDayMaxDate%	
Max Rain/Hour	%LT_RainHourMax%	
Date Max Rain/Hour	%LT_RainHourMaxDate%	
Time Max Rain/hour	%lt_rainhourmaxdatetime%	
Last Rain desert start	%LT_NoRainDateStart%	
Desert begin only time	%LT_NoRainDateStartT%	
Desert begin only date	%LT_NoRainDateStartD%	
Last rain desert end	%LT_NoRainDateStartend%	
Last rain desert end time	%LT_NoRainDateStartendT%	
Last rain desert end date	%LT_NoRainDateStartendD%	
Time without rain	%LT_NoRainDuration%	
Time without rain	%LT_NoRainDuration[x]% #	
Longest frost begin	%LT_IceDayDateStartbegin%	
Longest frost begin time	%LT_IceDayDateStartbeginT%	
Longest frost begin date	%LT_IceDayDateStartbeginD%	
Longest frost end	%LT_IceDayDateStart%	
Longest frost end time	%LT_IceDayDateStartT%	
Longest frost end data	%LT_IceDayDateStartD%	
Duration longest frost	%LT_IceDayDuration%	
Duration longest frost	%LT_IceDayDuration[x]% #	
Max Solar	%LT_SolarMax%	
Date Max Solar	%LT_SolarMaxDate%	
Time Max Solar	%LT_SolarMaxTime%	
Sensor available+Html	%ws_available[42]=yes,no%	{38->WS2500; 42->VantagePro}
Max UV	%LT_UVMax%	
Date Max UV	%LT_UVMaxDate%	
Time Max UV	%LT_UVMaxTime%	
Sensor available+Html	%ws_available[41]=yes,no%	
Recording begin	%LT_Begin%	
<b>Values only for current Year -----</b>		
Last rain desert start	%LT_YearNoRainDateStart%	
Last No Rain end	%LT_YearNoRainDateStartend%	
Time without rain	%LT_YearNoRainDuration%	
Time without rain	%LT_YearNoRainDuration[x]% #	
Longest frost begin	%LT_YearIceDayDateStartbegin%	
Longest frost end	%LT_YearIceDayDateStart%	
Duration longest frost	%LT_YearIceDayDuration%	
Duration longest frost #	%LT_YearIceDayDuration[x]% #	
Max Rain/hour	%LT_YearRainHourMax%	
Date Max Rain/hour	%LT_YearRainHourMaxDate%	
Time Max Rain/hour	%LT_YearRainhourmaxdatetime%	
MaxChange pressure 1h	%LT_YearBaroMax1h%	
Date MaxChange pr. 1h	%LT_YearBaroMax1hDate%	
MaxChange pressure day	%LT_YearBaroMaxDay%	
Date MaxChange pr. day	%LT_YearBaroMaxDayDate%	
MaxChange pressure 24h	%LT_YearBaroMax24h%	
Date MaxChange pr. 24h	%LT_YearBaroMax24hDate%	

## Variables with store-and-forward function and/or fetch-function:

Allocation:

`%ws_setmem[x]=zzzzz%`      `x = 1..128` - can arbitrary text and/or values, Variable allocation and so forth.  
being with a max. length of 80 characters!  
#1..32 are initiated with "-255"

Using:

`%ws_getmem[x]%`      `x = 1..128`

Example:

Allocation beginning:      `~%ws_setmem[1]=this is only a TEST 21%~` at the end of allocation

Query of the allocation      `~%ws_getmem[1]%`

`%unit_off%`

`%ws_setmem[2]=%ws_compare[1]=%t_sensday_d%~0~`Time sensor `%t_sensday%` minutes~Today no captured  
Time`%%`

Query of the allocation:      `~%ws_getmem[2]%`

If a storage variable `1..32` doesn't contain any data, i.e. not yet set, it returns as value **-255**

Example: Query whether the Variable 10 is set:

`%ws_compare[6]=-255~%ws_getmem[10]%`~Variable was set~Variable never used%

**Caution! the allocation may occur only once in the line, the allocation is valid for so long until it "is overwritten"**

**or the program is terminated!**

**-> with that the potentiality exists variables pass on, where they are not usually supported!**

**This Variables are set only, if the corresponding Template was worked off:**

Query Template\_yest      `%ws_getmem_yest%`

Query Template\_w      `%ws_getmem_w%`

Query Template\_m      `%ws_getmem_m%`

Query Template\_y      `%ws_getmem_y%`

Query Year View      `%ws_getmem_year%`

Example:

These data are only shown in a Html-file, if the Yesterday-Template was worked off

Prerequisite: the variables `getmem[x] - 1 ..3` is also assigned in `template_yest.txt` there.

`%ws_compare[6]=-255~%ws_getmem_yest%~<!--%`

`%ws_compare[6]=-255~%ws_getmem[1]%`~Date yesterday:      `%ws_getmem[1]%`~ %

`%ws_compare[6]=-255~%ws_getmem[2]%`~Temp Min yesterday      `%ws_getmem[2]%`~ %

`%ws_compare[6]=-255~%ws_getmem[3]%`~Temp MinTime yesterday      `%ws_getmem[3]%`~ %

`%ws_compare[6]=-255~%ws_getmem_yest%~-->%`

## 3 variables, that store a complete result line, maximum Length 2048 signs^

-> the `=^ws_setmemline` - variable must stand at the end of the line!

store line 1      1      `^=ws_setmemline1^`

store line 2      2      `^=ws_setmemline2^`

store line 3      3      `^=ws_setmemline3^`

Using stored line      `^=ws_getmemline3^`

Result of the 3 lines `^ws_getmemline1^#^ws_getmemline2^#^ws_getmemline3^`

## Variables with calculation

**3 arguments necessary, allowed only "~" as argument separators,**

in the case of invalid values (no numbers) becomes " " = space as a result returned!

Allowed value for decimal places 0..10

`%ws_calc1[x]=v1~v2~Dec%`      (when 2x Variable in line)

`%ws_calc[x]=v1~v2~Dec%`

Sum      `v1+v2`      `%ws_calc[+]=12.0~15.1~1%`

Subtraction	v1-v2	%ws_calc[-]=12.0~15.1~2%
Multiplicat.	v1*v2	%ws_calc[*]=12.0~15.1~0%
Division	v1/v2	%ws_calc[/]=12.0~15.1~3%
2er Average	(v1+v2)/2	%ws_calc[2]=12.0~15.1~3%

### Calculation with mem-Variables

Multiple addition with mem-Var	<b>memstart=1..127, memend=2..128</b>	%ws_calcmem[+]=memstart~memend~decimal places%
Average value from mem-Variables		%ws_calcmem[0]=memstart~memend~decimal places%

Mem Addition w1+w2	<b>mem1=1..128, mem2=1..128</b>	%ws_calcmem2[+]=mem1~mem2~decimal places%
Mem Subtraktion w1-w2		%ws_calcmem2[-]=mem1~mem2~decimal places%
Mem Multiplikation w1*w2		%ws_calcmem2[*]=mem1~mem2~decimal places%
Mem Division w1/w2		%ws_calcmem2[/]=mem1~mem2~decimal places%
Mem 2 Average (w1+w2)/2		%ws_calcmem2[2]=mem1~mem2~decimal places%

### Note !

The calcmem2 variable always used only 2 Mem variables values  
The calcmem variable uses a set ( up ) of Mem variables

### Array Calculation

%wsx\_calcarray[id~s~a~d~**ARRAY**]%

id = -1..46

s = Separator (for example " " , " ; " ) -> 1 char! between the values

a = 0 ->Average - with id36 (Wind direction) the dominating wind direction is reported

a = 1 ->Minimum

a = 2 ->Maximum

d = decimal places

**ARRAY** may be a corresponding array variable or even a separate entry  
invalid values in the array (for example "--") are ignored  
id is currently only evaluated for wind direction (36)!

Example: Sum of 2 values.

%curval[3]% = 6.1 °C      %curval[0]% = 3.4 °C

%unit\_off% %ws\_calc[+] = %curval[3]% ~ %curval[0]% ~ 3%

Result: 9.500

Example with 2x calculation!

%unit\_off% %ws\_calc1[/] = %ws\_calc[+] = %curval[3]% ~ %curval[0]% ~ 3% ~ 2 ~ 3%

Result: 4.750

**Caution! Pay attention to the sequence/setup of the variables!!**

## Variables with comparison of two values and result as user setting

**4 arguments necessary, allowed only "~" as argument separators,**

in the case of invalid compare data (no numbers)

becomes " " = space as a result returned!

**%ws\_compare[x]=w1~w2~right~wrong% - for x: 1:>, 2:>=, 3:=, 4:<=, 5:<, 6:<>**

Arrangement v1 > v2	%ws_compare[1]=12.0~15.1~yes~no%
Arrangement v1 >= v2	%ws_compare[2]=12.0~15.1~yes~no%
Arrangement v1 = v2	%ws_compare[3]=12.0~15.1~yes~no%
Arrangement v1 <= v2	%ws_compare[4]=12.0~15.1~yes~no%
Arrangement v1 < v2	%ws_compare[5]=12.0~15.1~yes~no%
Arrangement v1 <> v2	%ws_compare[6]=12.0~15.1~yes~no%

Peculiarity with [6] =<> and comparison with -255: If is v1=-255 and v2 is any text, (normally v2 must be a value) this is taken into account in this particular case.

Example:

```

%curval[3]% = 6.1 °C           %curval[0]% = 3.4 °C           %rainday% = 4.7 mm
%unit_off%%ws_compare[1]=%curval[3]%-~%curval[0]%-~v1 > v2~No(v1>v2)%
%unit_off%%ws_compare[4]=%curval[3]%-~%curval[0]%-~Yes - w1<=w2~No(v1<=v2)%
%unit_off%%ws_compare[1]=%rainday%~0~Rain today %rainday% mm~Today no rain%
Result:
1): v1 > v2
2) No(v1<=v2)
3) Rain today 4.7 mm

```

## Variable with user handicap:

```

Day State           %ws_isdaynight=Day,Morning twilight, Evening twilight, Night%
Day State           %ws_isdaynight=Day~Morning twilight~Evening twilight~Night%
4 Parameter necessary

```

```

Ice warning?        %ws_icewarning=Yes,No%
2 Parameter necessary

```

```

Sensor available+Html %ws_available[x]=Yes,No%           x = 1 - 46
2 Parameter necessary

```

The parameters must be separated with "~" (tilde) and the number of the expected parameters must agree - > otherwise becomes " " as result give back !  
The former parameter delimiter ", " (comma) still is supported!  
However with variables - nesting comes it to problems with it.

The parameters can be, of course, also Html code - it may in that, however, no "~" occur and the variables with parameter must be delivered in a line and as an end must a "%" be available!

If one wants to use this variable twice, for example:  
1) graphics file name as a background picture  
2) text to that  
so the variables must be performed each in separate lines.

With Variable %ws\_available ... you can "remark" Html-Code (for example) when a sensor become unavailable.

```

Example:
%ws_available[45]= ,<!-- %           Following code is faded out when "wind gust" unavailably
... Html-Code
%ws_available[45]= ,--> %

```

Nesting of variables: allowed from V2.80.6

```

Example:
%alwaysseppoint_on%           necessary, when decimal separator is ", " Comma!
Sensor2 available             %ws_availableX[2]=%curval[2]%,---%
%alwaysseppoint_off%

```

**The same variable may occur in a line only twice !**

## ----- Formatting -----

```

%unit_off%
Formatting *10                 %ws_format10[12,1]%
Formatting *10                 %ws_format10[%curval[0]%% %ws_format10[%windms%%]%
Formatting *10                 %ws_format10[only a test]%

Formatting integral           %ws_format1[12,1]%
Formatting integral           %ws_format1[%curval[0]%% %ws_format1[%windms%%]%
Formatting integral           %ws_format1[only a test]%
%unit_on%

Remove blanks etc.           %ws_modtext[das ist nur ein test äöüß]%

```

Replace with Html-Code	%ws_replaceforhtml[das ° ^ Ä ist nur ein test äöüß]%	
Replace with UTF-8 Code	%ws_replaceforutf8[das ° ^ Ä ist nur ein test äöüß]%	
Remove chars	%ws_replacestr=oldtext1~newtext2~text% %ws_replacestr=~ ~00:24% %ws_replacestr=/~::~00/39%	
Compare text	%ws_comparestr=text1~text2~text3% If text1 <> text2 then result = text2 If text1 = text2 then result = text3	
Compare text =/<>	%ws_comparestrx=text1~text2~text3~text4% if text1 = text2 then result = text3 if text1 <> text2 then result = text4	
<b>Example:</b>	%nrtval[8]%	
Compare text	%ws_comparestr=- ~16.1~0%	
Compare text	%ws_comparestr=- ~%nrtval[8]~0%	
fill with blanks	%ws_fillstr=total_number~Text% ->invalid total number then total number=10 if the "text"-total-number bigger then the total-number, then no alteration!	
Remove text	%ws_cutstr=start~count~text%	
Instring text	%ws_instr=start~count~text% if start=0, then "count" signs from right hand are removed if start <0 the counting signs from right hand at invalid data, for example for start,count no number, a " " is returned	
<b>Example:</b>		
Remove text	%ws_cutstr=0~5~1234567890abcdefghij%	->1234567890abcde
Remove text	%ws_cutstr=-5~3~1234567890abcdefghij%	->1234567890abcdeij
Remove text	%ws_cutstr=1~5~1234567890abcdefghij%	->67890abcdefghij
Remove text	%ws_cutstr=5~5~1234567890abcdefghij%	->12340abcdefghij
Instring text	%ws_instr=0~5~1234567890abcdefghij%	->fghij
Instring text	%ws_instr=-5~3~1234567890abcdefghij%	->fgh
Instring text	%ws_instr=1~5~1234567890abcdefghij%	->12345
Instring text	%ws_instr=5~5~1234567890abcdefghij%	->56789
Reform time to am/pm	%ws_timeampm[hh:mm]%	
Reform time to am/pm	%ws_timeampm[%ws_time%]%	
Time to val	%ws_timetoval[09:14]%	->9.24
Time to val	%ws_timetoval[899:14]%	->899.24
Time to val	%ws_timetoval[%ws_daylength%]%	

---

### Control variables

---

Remove this line and set new next file `%openfile&remove=testx.html%`

Sense of this variable is: no more disturb of the contents of a text file!!

-> only at `wap.txt` – the `%openfile=testx.html%` has the same function

Files extend/append `%customfileappend=append.txt%`

For example, one can produce an individual export file with it, that continuously automatic it is extended.

The file name for `openfile=dateiname.ext` can be set with variables:

Example:

`%ws_setmem[30]=wswin_xml.txt%`

Setting new file: `<!-- %openfile=%ws_getmem[30]%% --> !!!`

Using of `varialbes` for result file name

for %customfile=  
 are the variables ws\_year, ws\_month2, ws\_day2 and ws\_yearfolder  
 and ws\_week and ws\_dayweek allowed!!!

### Start Program at Condition=1

Condition can and should be build with the variables (ws\_compare)  
 Path+Filename: max 255 Signs - Paramter: max 80 Signs!

`%wswin_runprogram=Condition^C:\Path\Filename^Parameter%`

-> Program is started when all customised files are worked off and condition is 1

`%wswin_runprogramx=Condition^C:\Path\Filename^Parameter%`

-> if the current customised file is ready and condition is 1

Insert empty line	<code>%ws_newline%</code>	
Delete line	<code>%ws_delline%</code>	
Ignore line	<code>%ws_ignore%</code>	
Don't encode the line	<code>%ws_nocoding%</code>	The variable must be written in lowercase letters!

Only month dates `%month_only%`  
 This Control Variable "month\_only" is relevant only in the year representation and is reseted automatic after processing. -> [main application in Templates](#)

Reverse working off in day-view	<code>%templatereverseday%</code>	
Units not display	<code>%unit_off%</code>	
Units display	<code>%unit_on%</code>	-> default
Justify on	<code>%justify_on%</code>	
Justify off	<code>%justify_off%</code>	-> default
Unit justify on	<code>%justifyunit_on%</code>	
Unit justify off	<code>%justifyunit_off%</code>	-> default
Don't taken over empty lines ON	<code>%remove_empty_line_on%</code>	
Don't taken over empty lines OFF	<code>%remove_empty_line_off%</code>	-> default

<a href="#">Allow the hour calculation</a>	<code>%curminmaxhour_on%</code>	-> default
<a href="#">Barriers of the hour calculation</a>	<code>%curminmaxhour_off%</code>	

Values always metric	<code>%alwaysmetric_on%</code>	
Values as defaulted in program	<code>%alwaysmetric_off%</code>	-> default

Always Dot(.) as "comma separator" on	<code>%alwaysseppoint_on%</code>	
Always Dot(.) as "comma separator" off	<code>%alwaysseppoint_off%</code>	-> default

**This control variable has only sens in Countries with comma (",") as Decimal-Separator**

Always comma as "Decimal separator" on	<code>%alwayssepcomma_on%</code>	
Always comma as "Decimal separator" off	<code>%alwayssepcomma_off%</code>	-> default

Thousand separator for one line on	<code>%thousandsep_on%</code>	
------------------------------------	-------------------------------	--

Insert Html-space off	<code>%ws_hardspace_off%</code>	
Insert Html-space on (and other special Html-Code)	<code>%ws_hardspace_on%</code>	-> default

Use Html-Return ( ) in lists output	<code>%ws_htmlreturn_on%</code>	
Don't use Html-Return ( ) in lists output	<code>%ws_htmlreturn_off%</code>	

Always Minus as "Text" on	<code>%minus_text_on%</code>	
Always Minus as "Text" off	<code>%minus_text_off%</code>	-> default

-> [only meaningfully at speech output /- generation!](#)

decided Date/Time representation in UTC                    %utc\_on%  
decided Date/Time representation in UTC                    %utc\_off%        -> default

Time in Text    %ws\_time\_in\_text\_on%  
Time normal    %ws\_time\_in\_text\_off%

-> if the speech engine don't speak the time correct!  
Example: normal **20:13** -> with variable: **20. clock. 13. minutes.**

Only hour data    %hour\_only%  
Only hour data off    %hour\_only\_off%        -> default

If no data at the "complete" hour are available, the next record is used.  
-> main using in Templates  
this control variables "hour\_only" is only in "DAY" viewing relevant

New date format    %ws\_userdate=YYYY-MM-DD%  
needs YY, MM and DD, also the time format is set to 24 hours  
Windows date format    %ws\_userdate=%        -> default

Ansi to OEM on    %ansitooem\_on%  
Ansi to OEM off    %ansitooem\_off%        -> default

For font transformation form Windows to DOS  
In Case of use of these variables an "evaluated" line may be max. of 512 signs long - that is where the variables were already replaced by the values  
(this control variable "ansitooem" is evaluated only in Templates)

Ansi to UTF8 on    %ansitoutf8\_on%  
Ansi to UTF8 off    %ansitoutf8\_off%        -> default

For Char transformation from ANSI to UTF8  
Caution! This control variable "ansitoutf8" is evaluated only in Templates

+++++  
Data saving for later using: %####% stands for 1...255 , (Percent-signs necessary!)  
Begin data store data in file                                %calc\_save\_on%####% -> data in file calc####%\_%customfile%  
End of storing data in file                                    %calc\_save\_off%

Using the data formerly stored with calc\_save\_on or also from directly generated value-data file:  
Working variables off                                        %calc\_off%####% -> data from calc####%\_%customfile%  
Working variables on                                         %calc\_on%

These variables can be used only in pairs, so if the variable calc\_save\_on is actively  
the control variable calc\_off is ignored and vice-versa if calc\_off is actively calc\_save\_on is ignored!

The variable of calc\_save\_on/calc\_save\_off doesn't work in context of Template-line (in Template-files already!)

One can generate corresponding value-data files with data itself and then can these with calc\_off - calc\_on "include"

If the variables calc\_save\_on/calc\_off more times in a data file, one necessarily must given a number (1..255)  
to the differentiation behind it additionally.  
The value-data files then are numbered in accordance with this number for example at user file file ws\_variable.txt:  
calc####%\_ws\_variable.txt etc..  
Naming with it is "calc" + number + "\_" + user-data file-name

If no number was declared or there is a problem with it (for expample bigger 255 etc..) the program places the  
number "1" for it,  
or shorten the number on 3 positions (example 1334 -> it is used in 133).

Example for a user-defined data file without additional number behind it custom.txt: calc1\_custom.txt

Get text from any file                                        %calc\_off\_file=%Path\Filename%

+++++

Corresponding control variable in a line (for example unit\_on and unit\_off) **should not occur** - the "default" variables are preferential.

### Begin Template line `%templatebegin%`

This variable routes the iterations correspondingly the amount of information/-number. The following text (variables) becomes repeated as far as to the return on that occasion. **The repetitions become only in one TEMPLATE -file executed!**

The data/variables of a "Template" must stand in **a line** and this variable must stand at the beginning of the line.

There are **five Template-lines** allowable in the template file - changeable in wswin.cfg to max. twenty (20).

**The other control variables should not occur in the Template line.**

Example:

```
%justify_on%hour_only%      -> justify values with spaces, only each hour
%templatebegin%ws_time%curvaloutstemp%curvaloutshum%
```

Result: (not all repetitions represented)

```
00:00      3.3 °C      72 %
01:00      2.7 °C      75 %
02:00      1.6 °C      78 %
03:00      2.3 °C      78 %
04:00      2.8 °C      69 %
05:00      3.3 °C      65 %
06:00      3.1 °C      69 %
07:00      3.2 °C      68 %
. . .
13:00     10.6 °C      40 %
. . .
```

With this variable (`%templatebegin%`) becomes with the suns-/moon times also the inserting of the hard one(s), blank characters (`&nbsp;`) are turned off - must stand at the beginning of the line and this line can't be contain any variables.

-> Use for the disabling of the "hardcoded blank characters" better `%ws_hardspace_off%`

### Template-Control-Files:

```
Time      template_time.txt
Day:      template_d.txt
Yesterday template_yest.txt
Week:     template_w.txt
Month:    template_m.txt
          template_noaa_m.txt
Year:     template_y.txt
          template_noaa_y.txt
Season   template_season.txt
Test:    template_t.txt
Test:    emplate_test~.txt
```

With the Template - files is intended a maximum file nesting of **5 files (per type)!**

If no target name is defaulted about the variables "customfile=" or when target name is defaulted to ".txt", ".html", ".htm", ".xhtml" or ".xml" , the file name is formed from the corresponding date values with ".txt" as filename extension (with no defaulted name) and/or. the filename extension as defaulted (.txt, .html, .htm, .xhtml, .xml). Is to be considered, if no target name is defaulted, the data of the 1st line are extinguished in spite of that (system-dependent) !!! Therefore, bring only comment then here.

### Special feature for day-file:

Is here the indicated destination file name "dayx.txt"

```
%customfile=dayx.txt%
```

The generated files are the according weekday's number to the actual day

day1.txt=Monday - day7.txt=Sunday

The signs after the "." and to to the "%" are interpreted as **filename extension** and added to the file name again.

for example: **dayx.csv** -> becomes files **day1.csv**; **day2.csv** and so forth.

Special feature for test-file: Is indicated here as a destination file name "testx.txt"

%customfile=testx.txt%

The file names are generated for the according period of the representation, for example:

test\_d1.txt = Day 1 of the corresponding month/year

test\_w1.txt = Week 1 of the corresponding year

test\_m4.txt = Month 4 of the corresponding year

test\_y2001.txt = Year 2001

Also here you can default another filename extension - for example %customfile=testx.html% - then the generated files are test\_d1.html, test\_w1.html and so forth.

The control files template\_noaa\_y.txt and/or template\_noaa\_m.txt make always an output file in the "text-folder" to the model:

noaaYYYY.txt for example noaa2002.txt

noaaYYYYMM.txt for example noaa200202.txt (February 2002)

### **Speech Wave file/ Speech output:**

For that the "ws\_speech.txt" (or ws\_speech1h.txt) is planned.

**File-nesting is not possible. - %openfile= -> is not relevantly**

The Destination File Name is defaulted in the program (about menu) - %customfile= -> is not relevant

[Functions](#)

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