

MeteoWare_CS

Version 3

Display and evaluation functions



Overview

MeteoWare_CS_3 is a modular and scalable software package for the collection and evaluation of meteorological data. It can be adapted from a simple single-position system with a data logger, to an application which is distributed by LAN/Internet, with up to 999 users and 999 data loggers.

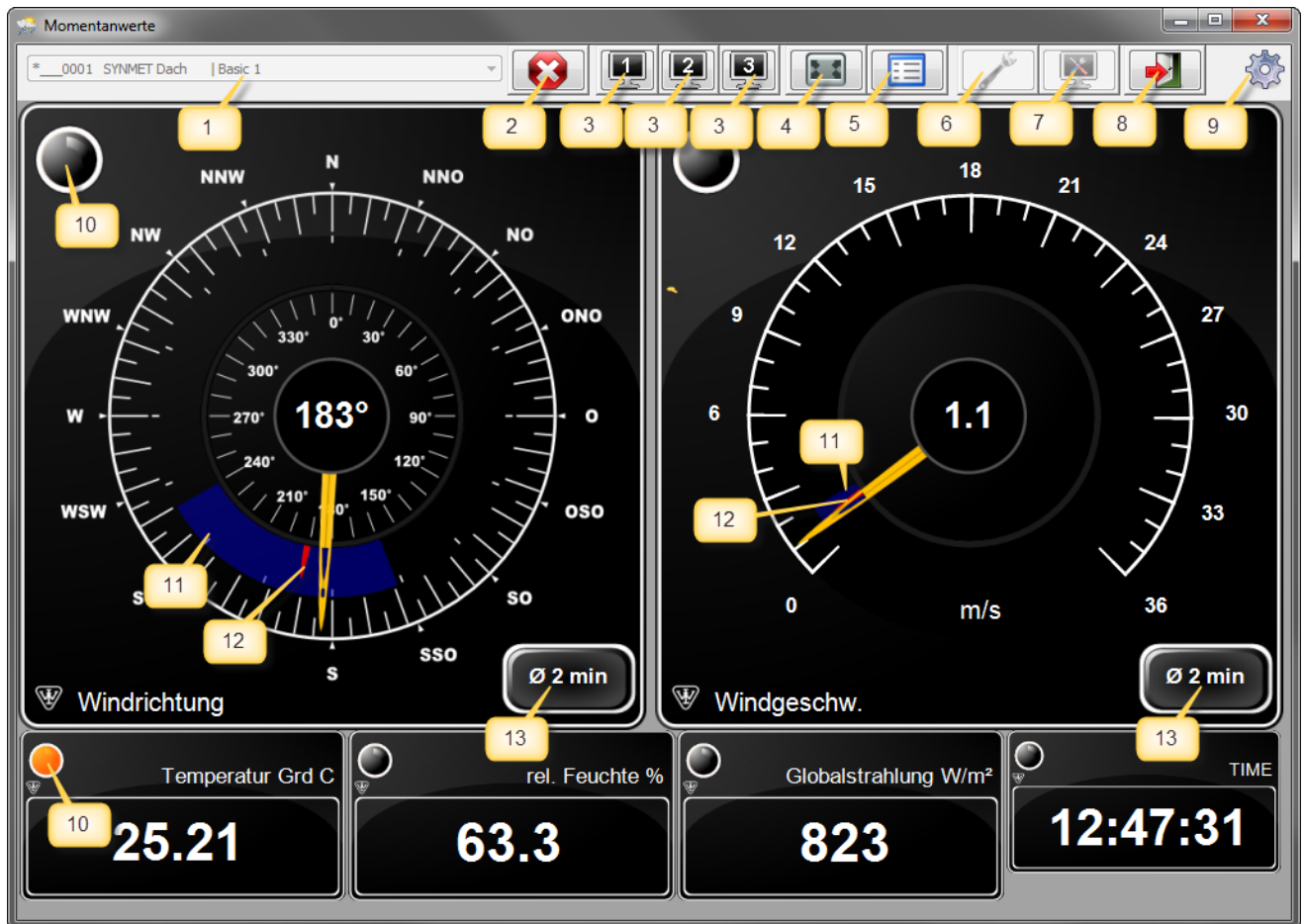
MeteoWare_CS_3 works with the data collection systems TROPOS, SYNMET, SYNMET II, SYNMET IIA, Ser[LOG], Met[LOG] and PRELOG, as well as LAMBRECHT meteo GmbH's serial wind and weather sensors.

MeteoWare_CS_3 is a 32-bit application which has been designed for use with Windows 7, Windows 8/8.1 and Windows 10 (32 bit and 64 bit). The program can be used in server operating systems such as Windows 2008 und 2012, as long as the 32-bit subsystem WoW64 is installed.

MeteoWare_CS_3 is available in the following models:

- | | |
|-----------------|--|
| 36.09340.000000 | MeteoWare_CS_3 Standard
1 user, 3 measuring systems, a date retrieval system, wind statistics
and SQL-interface |
| 36.09340.100000 | MeteoWare_CS_3 Network
Enhanced model
5 users (floating licence)
Licence server, database server, backup server,
MeteoWare_CS_3_Client
(Only in conjunction with 36.09340.000000) |
| 36.09340.110000 | MeteoWare_CS_3 Network plus
Expansion to 999 users (floating licence)
(Only in conjunction with 36.09340.100000) |
| 36.09340.200000 | MeteoWare_CS_3 Station plus
Expansion to 999 measuring systems
(Only in conjunction with 36.09340.000000) |

Real-time Values



In this screen, when you first use it the real-time value display will be selected from a definition list (**Tag 1**). Standard definitions of all connected data loggers are already available for all users.

These are generated in the **Station Settings** menu, by retrieving the logger configuration. After selecting a list, the real-time values are initiated using the



button (**Tag 2**). This button then changes its appearance to

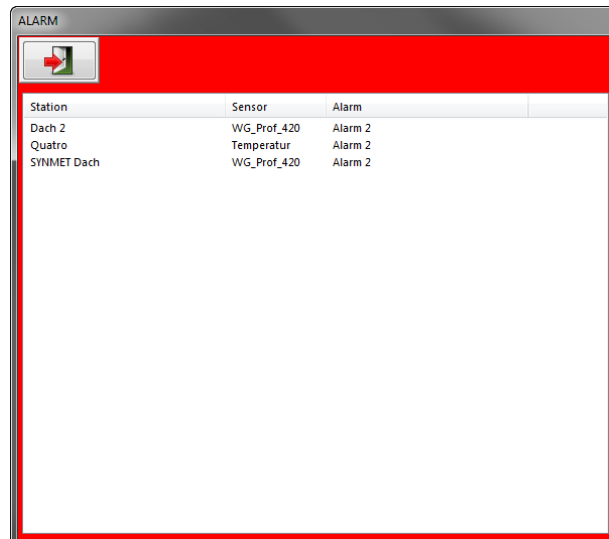


Wind detectors will be shown as analogue instruments. All other sensors and the time are shown in digital form.

All display elements contain an indicated LED (**Tag 10**). By default they are turned off (grey/black). As a way of warning (Definition: **system settings limits** and **system settings alarm settings**) the LED changes colour, dependant on the reason for the alarm, to yellow (alarm 1), orange (alarm 2), red (faulty sensor) or blue (station not available).




Unless the alarm monitoring has been activated in the **Alarm Settings** function, the following window will appear when an alarm or error occurs:



Station	Sensor	Alarm
Dach 2	WG_Prof_420	Alarm 2
Quatro	Temperatur	Alarm 2
SYNMET Dach	WG_Prof_420	Alarm 2

The alarm monitoring takes place, as can be seen, not only for currently displayed sensors, but for all measuring channels available via the data retrieval service (max. 25 stations and max. 80 measuring channels).

This function block is only active when the real-time values are recorded by the data retrieval service. In this case, the  symbol (**Tag 9**) in the top right hand corner of the screen is for seeing the active data retrieval service.

Within the wind detector, there will be an indicated button (**Tag 13**) in the bottom right corner.

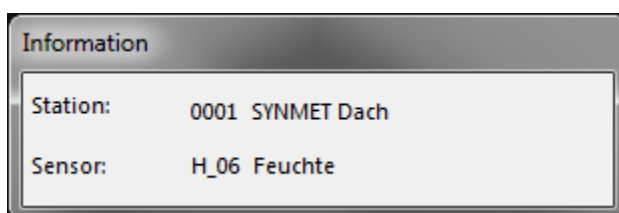
By clicking this button with the mouse, a gliding two minute average will be shown.

With a second click the gliding 10 minute average will be shown.

The segment (**Tag 11**) shows the range of values during the averaging time and the red indicator (**Tag 12**) shows the gliding average.


(Gliding averages are not available with the TROPOS data logger.)

A click of the mouse on another area of the display opens a window, which provides information on the origin of the values (measuring system sensor).




This display automatically deletes itself after a few seconds.




By clicking the  button (**Tag 4**) the display will cover the full screen. Neither the screen frame or the buttons will be shown. To leave this mode, right click on the mouse and a context menu will appear, through which the full screen mode can be exited.




The  button (**Tag 5**) changes the display from a graphical to a tabular from. In the tabular display the values of all connected stations will be shown by the active data retrieval service.

Realtime Values				
* _0001: Dach Basic 1				
Station	Sensor	Value	Unit	
Dach	Timestamp	02.07.2014 13:07:28		
Dach	WR_Prof_020	21.9	Grd	
Dach	WG_Prof_020	1.9	m/s	
Dach	WR_Prof_420	51.0	Grd	
Dach	WG_Prof_420	1.8	m/s	
Dach	PT100	18.40	Grd C	
Dach	Feuchte	48.2	%	
Dach	SP-Lite	1038	W/qm	
Dach	Druck	999.3	hPa	
Dach	WL_15189	0.0	mm	
Dach	Test-Sensor	0.0	mm	
Dach	dgN	0.00	mm	
Dach	Heizung Fuss	0	---	
Dach	Heizung Trichter	0	---	
Dach	Taupunkt	7.2	Grd C	
Garten	Timestamp	02.07.2014 12:11:45		
Garten	PT100	19.20	Grd C	
Garten	Feuchte	39.6	%	
Garten	WG	1.7	m/s	
Garten	WR	28	Grad	
Garten	Strahlung	Ov-Range	W/qm	
Garten	PT100	16.86	Grd C	
Garten	Druck	1001.3	hPa	
Garten	Druck	1001.1	hPa	
TROPOS_124	Timestamp	02.07.2014 12:08:58		
TROPOS_124	A3-WR-14577-Ind.	0.0	Grad	
TROPOS_124	A4-WG-14567-Ind.	2.9	m/s	
TROPOS_124	WR_ARCO	Open-Ch	grd	
TROPOS_124	WR_BASIC	50	grd	
TROPOS_124	WR_ARCO	0.0	---	




The  button switches it back to the graphical display.



The real-time value display is stopped using the  button (**Tag 2**). The selection list becomes available again and a new report definition can be selected.




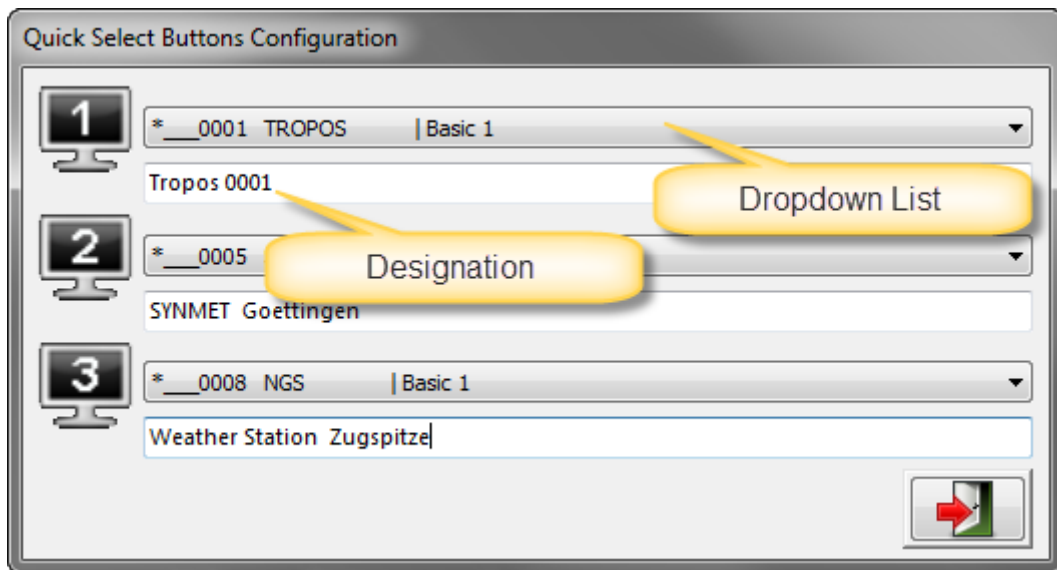
The  button (**Tab 3**) brings up the MeteoWare_CS_3 Designer. The button is only available when the real-time value display is stopped.



The buttons  (**Tag 3**) are used for quick selection of display layouts.





They are configured by clicking  (**Tag 7**). This function is available only , when real-time value display is stopped.



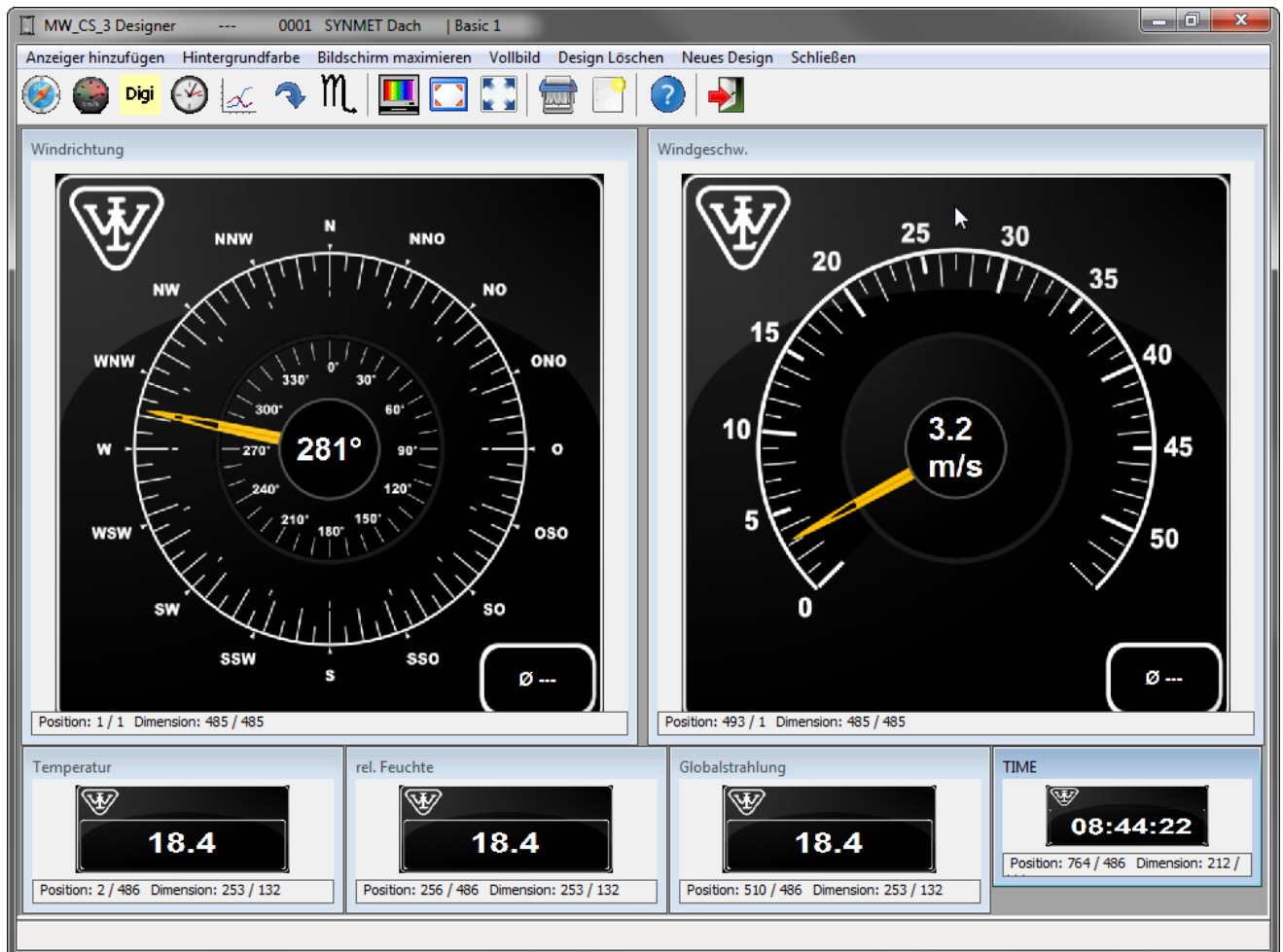
An instantaneous values layout is selected in the dropdown lists for each quick select button. In the designation textbox a short text can be entered, which is shown as tooltip when the mouse cursor is above the button.

The three selected instantaneous values layout may contain indicators of the type "Plot" or "Tendency". These indicators do not work on layouts which are not connected to a quick select button and if the **Data Retrieval Service** is not running.

The symbol  (**Tag 6**) indicates that the service is active.

Button  (**Tag 6**) starts the app **MeteoWare_CS_3 Designer**. The Button is active only when the instantaneous values is stopped.

MeteoWare_CS_3 Designer

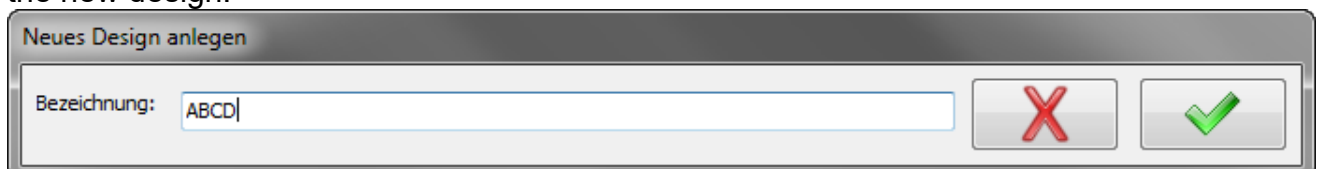


With the help of this program new definitions for real time value displays can be created and others modified. The designer is controlled using either the menu list or the toolbar.



Reference will now be made to the functions of the toolbar.

The button **Create New Design (Tab 13)** clears the screen and asks for the title of the new design.

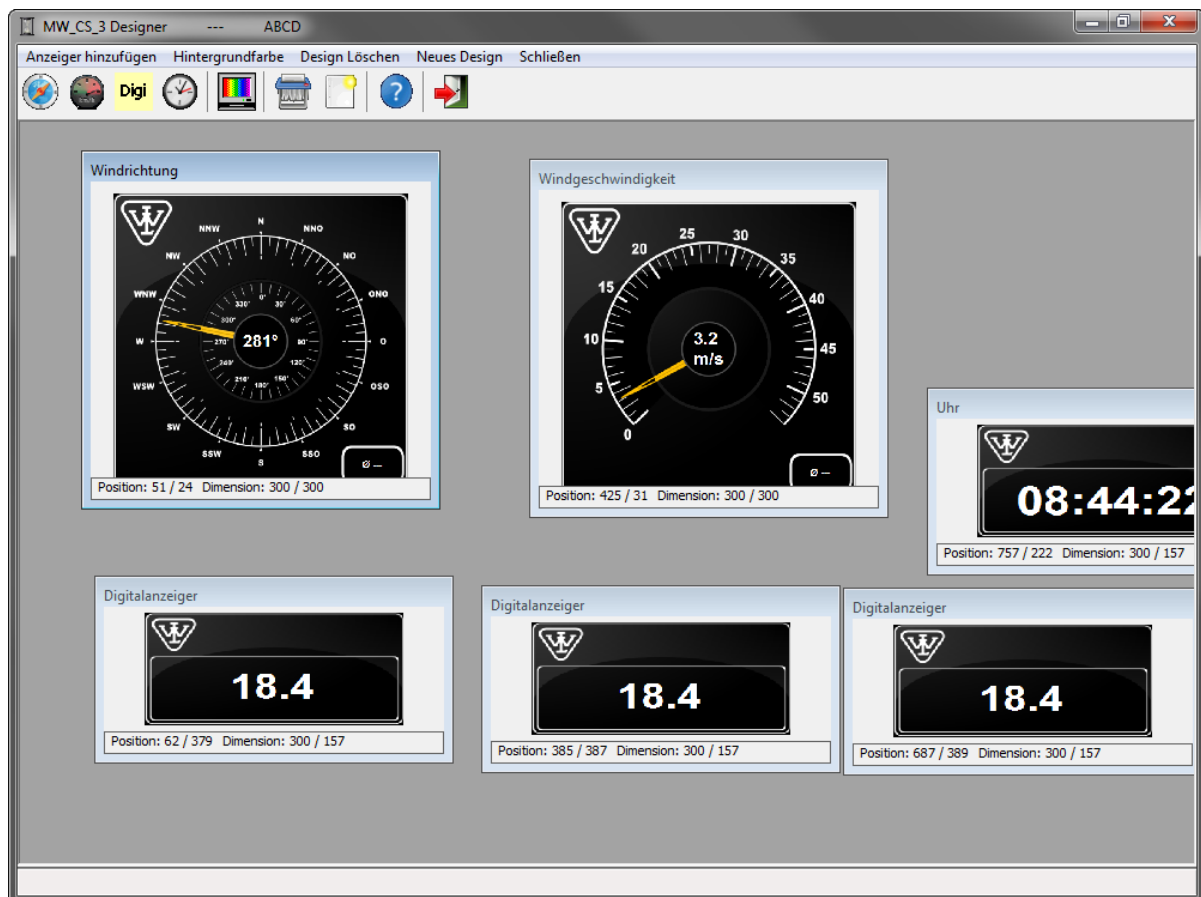


After entering a new title, the buttons **New Wind Direction Indicator (Tag 1)**, **New Wind Speed Indicator (Tag 2)**, **New Digital Display (Tag 3)**, **New Digital Clock (Tag 4)**, **New Plot Indicator (Tag 5)**, **New Tendency Indicator (Tag 6)** or **New Logo Indicator (Tag 7)** can be used and the corresponding elements are generated on the display surface.

Clicking the button **"Maximise Form" (Tag 9)** resizes the form to a dimension which keeps the aspect ratio for the real time value display when clicked to the forms maximize button.

Clicking the button **"Full Screen" (Tag 10)** resizes the form to the maximum dimension (aspect ratio) which is useful for showing the real time value display on full screen

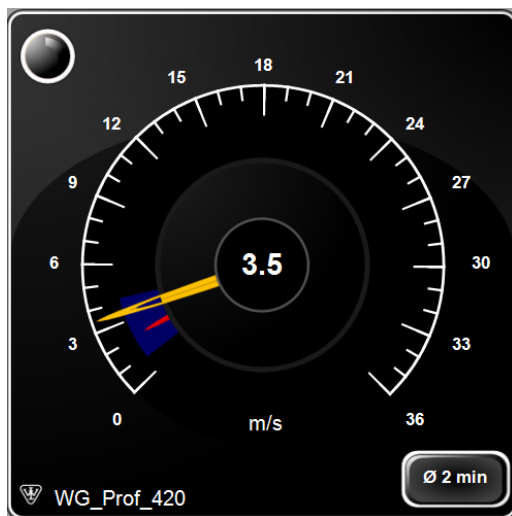
A copy of the current design is created by the button **Copy Design (TAG 12)**. A standard name for the copied design ("Copy_" + old name) is provided. It is editable and may be changed.



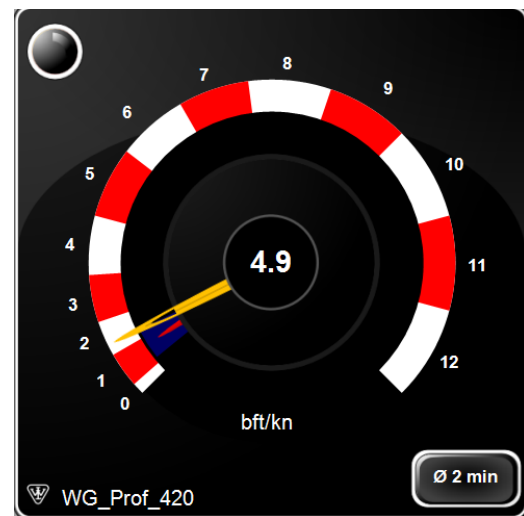
The size of the elements can be changed by using the mouse or keyboard (Ctrl and arrow keys). Their position can also be shifted by using the mouse or the keypad (shift and arrow keys). The fine adjustments are made using the keyboard (increment 1 pixel). In the bottom line of the display elements their position and dimension are displayed.

MeteoWare_CS_3

With a right click of the mouse on a display a context menu will be opened, which allows for the deletion of the display as well as setting its properties.



Wind Speed Indicator (Standard)



Wind Speed Indicator in Beaufort with a Digital Display of Knots

Wind Direction Indicator Properties

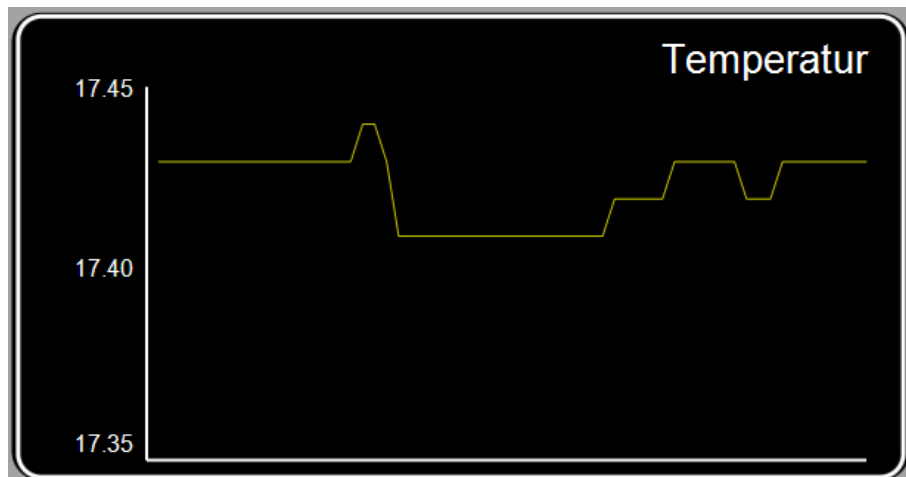
At the Wind Direction Indicator it can be determined whether it is a normal indicator or a ship wind indicator (NAV indicator). For applications where the wind direction should be set at a certain angle in relation to something, a guide line can be set in the indicator at 1° increments. This is helpful, for example, at an airfield if the wind should be set in relation to the runway or in a port the quay is set in relation to the wind.

Wind Direction Indicator with a drawn-guideline (*Tag 1*)

Wind Direction Indicator in “NAV” Presentation

Plot Indicator Properties

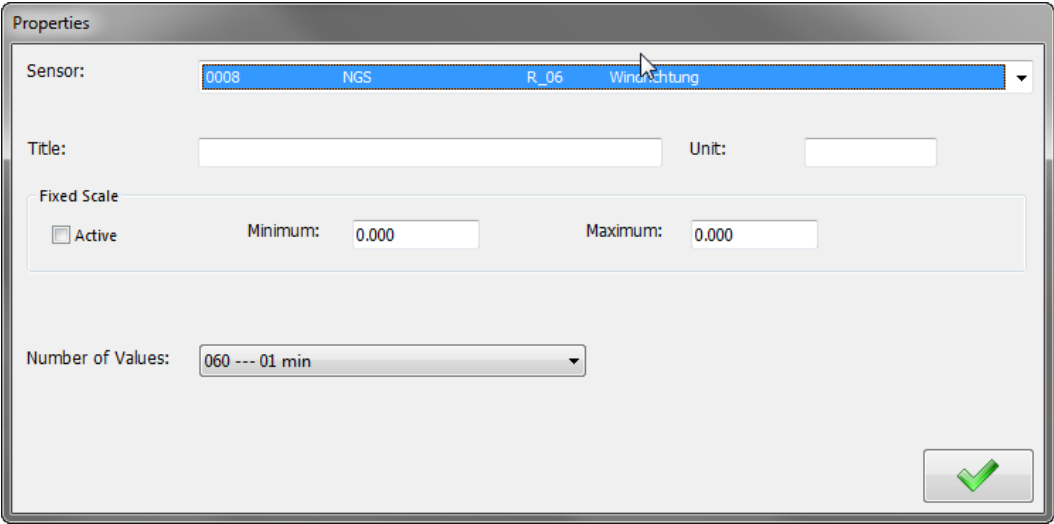
Plot - Indicators are used for presenting the progress of the measured values. The graph is updated every second.



Attention!

The **Plot Indicator** will work only if the real-time values are provided by the **Data Retrieval Service** and the real-time value layout is connected to one of the three quick select buttons.

The definition for **Plot-Indicators** includes sensor selection, specification of title, scaling and data range.

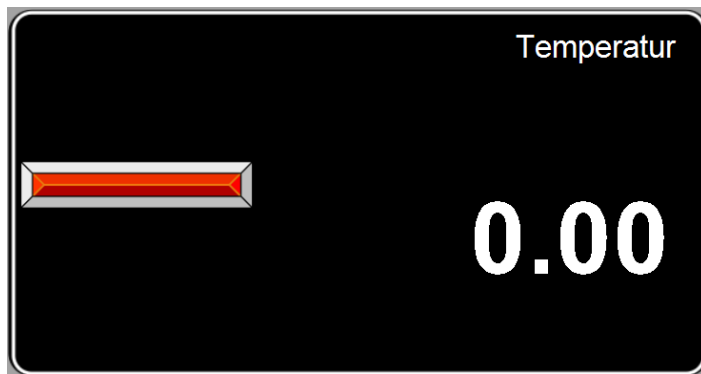


Title contains the title for the indicator. **Minimum** and **Maximum** are used for scaling the Y axis if the **Fixed Scale** is **Active**.

Number of Values specifies the data range. The range can be represented by 60 to 600 values. This is typical a time range form 1 minute to 10 minutes.

Tendency Indicator Properties

Tendency-Indicators provide information about the type of a tendency and about the change of the measured values in specified time range. The algorithm is based on the meteorological aPPP algorithm.



The **Tendency Indicator** will work only if the real-time values are provided by the **Data Retrieval Service** and the real-time value layout is connected to one of the three quick select buttons.

The definition for **Tendency-Indicators** includes sensor selection, specification of title, rounding and data range.

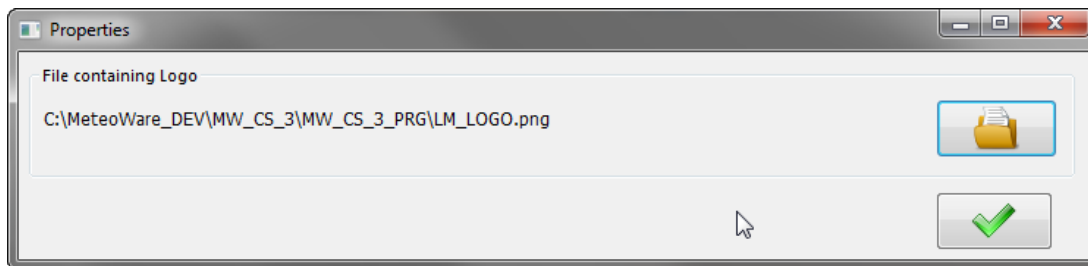
Title contains the title for the indicator.

Rounding is used to format the real-time values to a range which allows a reasonable tendency analysis.

Number of Values specifies the data range. The range can be represented by 60 to 600 values. This is typical a time range from 1 minute to 10 minutes.

Logo Indicator Properties

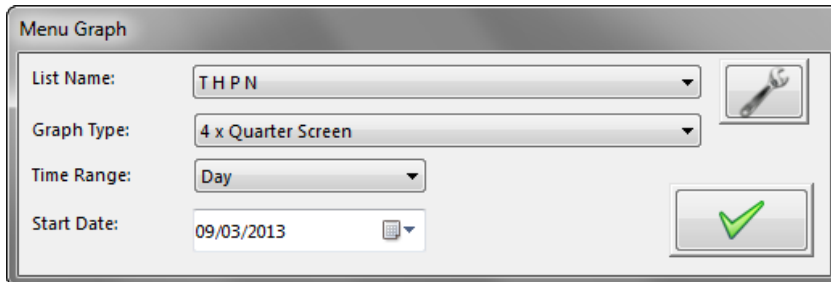
The **Logo Indicator** is used to display png files in the real-time value display. It could be used to implement the users company logo in the MeteoWare_CS_3 app.



The png file is selected by an open file dialog which is started by the button.

The graph will be scaled automatically to the indicator. its original aspect ratio is kept. A perfect aspect ratio for a graph is 2 : 1

Graph



Menu Graph

List Name: THPN

Graph Type: 4 x Quarter Screen

Time Range: Day


Start Date: 09/03/2013

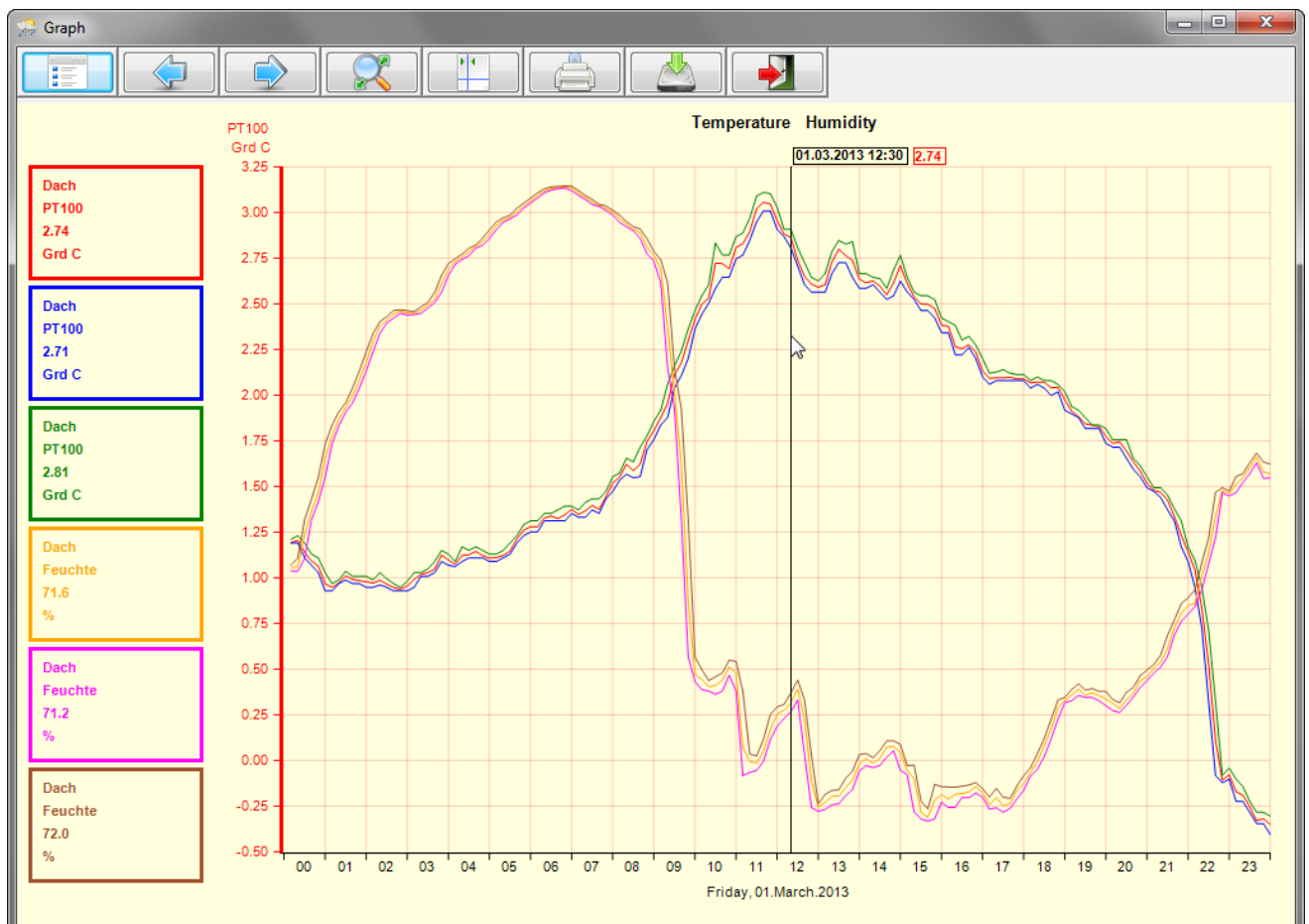
By starting the function **Graph** a window will open in which the name, the graph type, the time range and the start date of the evaluation can be selected.



MeteoWare_CS_3 supports 3 types of graph :

1. a full screen graph with up to 6 sensors
2. a graph with 2 half screens, each with a sensor
3. a graph with 4 quarter screens, each with a sensor

Using the  button the **Edit Graph** function will open.


By clicking the  button, the graph will be displayed.



With the help of the  and  button you can move chronologically backwards or forwards. The scaling of the Y axis can be set with the



button, from the default to the actually available minimum and maximum

(zoom). In order to see the numerical values on the curve, the  button switches the auxiliary line to being oriented by the mouse cursor. The date, time and value of points on the curve are shown when the cursor hovers over them. The graph



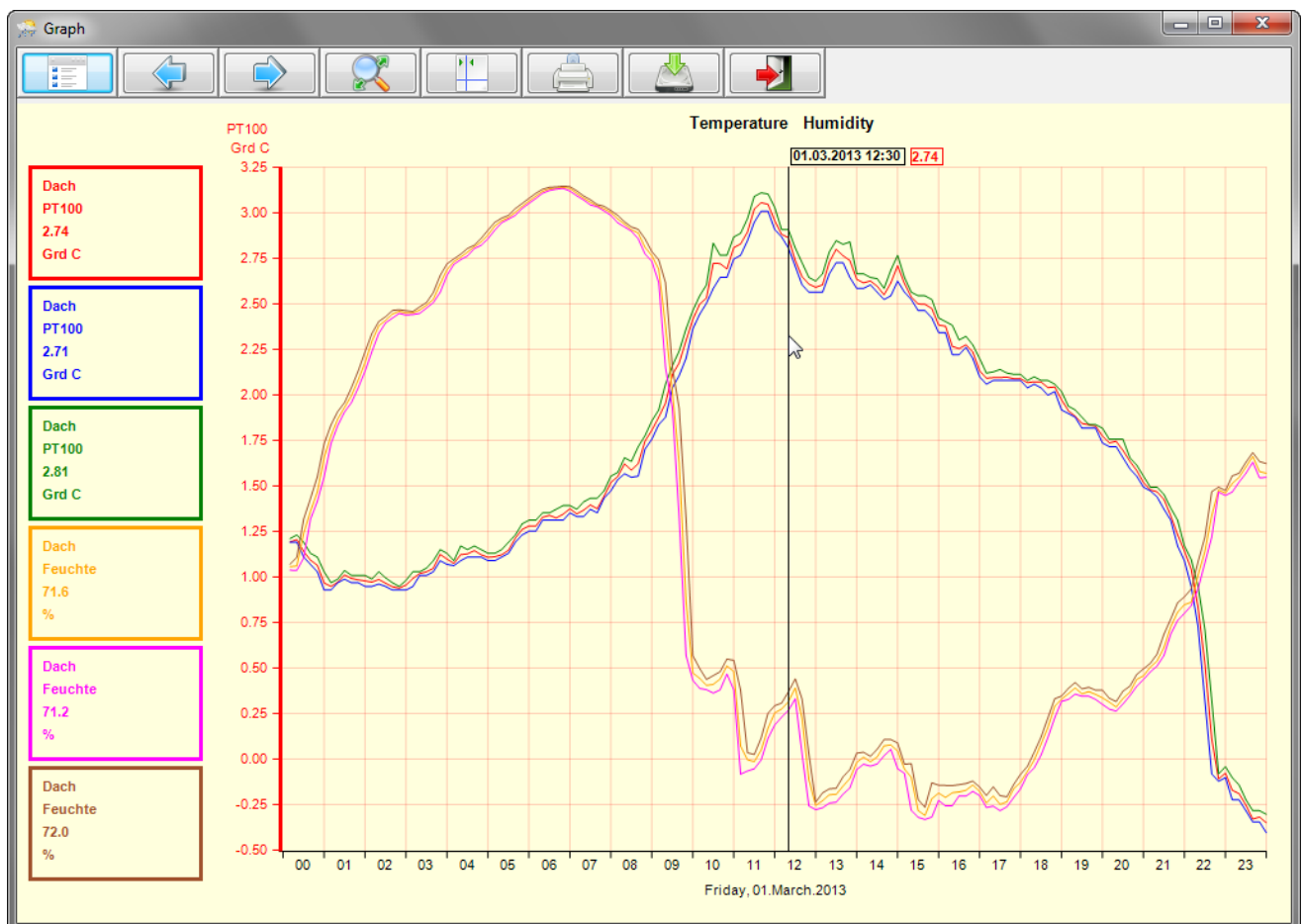
can be printed out by clicking the button. By using a pdf printer driver, the graphs can be stored in the form of a pdf file. In order to save the graphs in



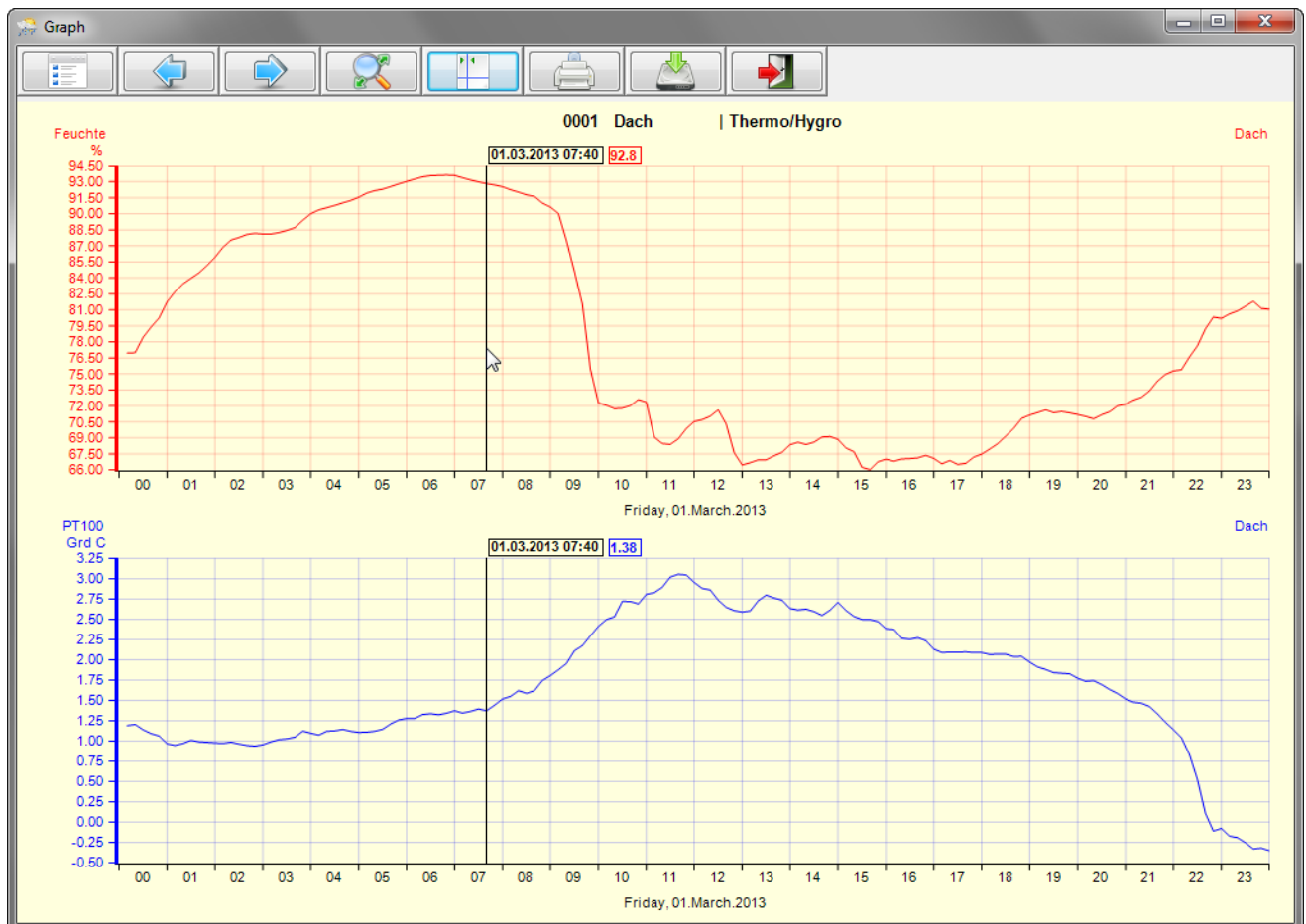
another application, you can use the button to export files in bmp, tif, gif,



jpg or png format. Clicking on the button displays the previously described **Menu Graph** window.



Full screen graph with up to 6 sensors. This shows the average, minimum and maximum curves for the measurement series temperature PT100 and relative humidity. The current Y axis applies to the maximum temperature. By clicking on one of the rectangles on the left hand side, the axis is converted to the appropriate value. The value display on the auxiliary line, at the mouse cursor, will change to the newly selected measurement.



Graph with 2 half screens, each with a sensor. This shows the curves for the measurement series temperature PT100 and relative humidity. Each curve has its own Y axis. The value display on the auxiliary line, at the mouse cursor, is shown for every curve.



Graph with 4 quarter screens, each with a sensor. Here the curves for the measurement series temperature PT100, relative humidity, air pressure and precipitation can be seen. Each curve has its own Y axis. The value display on the auxiliary line, at the mouse cursor, is shown for every curve.

Edit Graph

The 'Edit Graph' window displays the following configuration for six sensors:

Sensor	Sensor ID	Location	Unit	Scaling (Min)	Scaling (Max)	Graph Type	Color
Sensor 1	0001	Dach	T_05 PT100 AVR	-50.00	150.00	Line Chart	Red
Sensor 2	0001	Dach	T_05 PT100 MIN	-50.00	150.00	Line Chart	Blue
Sensor 3	0001	Dach	T_05 PT100 MAX	-50.00	150.00	Line Chart	Green
Sensor 4	0001	Dach	H_06 Feuchte AVR	0.00	100.00	Line Chart	Orange
Sensor 5	0001	Dach	H_06 Feuchte MIN	0.00	100.00	Line Chart	Pink
Sensor 6	0001	Dach	H_06 Feuchte MAX	0.00	100.00	Line Chart	Brown

Additional settings visible in the window include: List Name: Thermo Hygro 6, Title: Temperature Humidity, and a Background Colour button.

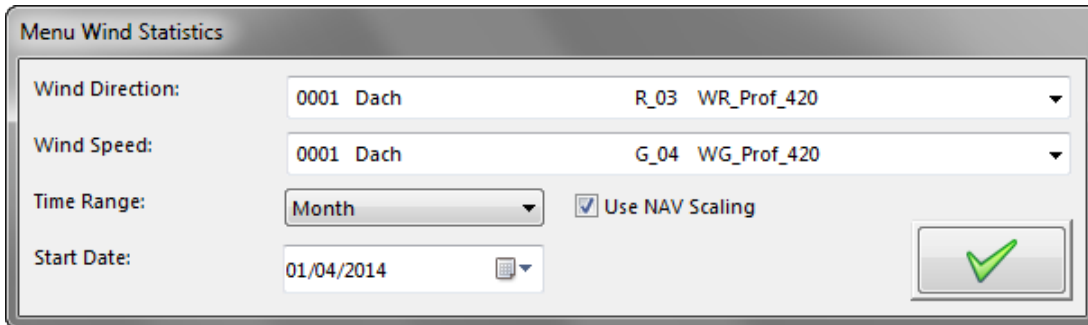
With this function, graph definitions can be created, edited and deleted.

Up to 6 sensors can be selected. For each sensor, a scaling (minimum and maximum), a graph type (line chart, bar chart, 45° wind direction diagram or scatter graph) and a colour can be specified.

In the case that the corresponding sensor thresholds are defined (**Setup System Thresholds**), it can be specified whether the thresholds should be shown in the graph.

The background colour of the graphical analysis can be freely defined using the **Background Colour** button.

Wind Statistics



Menu Wind Statistics

Wind Direction: 0001 Dach R_03 WR_Prof_420

Wind Speed: 0001 Dach G_04 WG_Prof_420

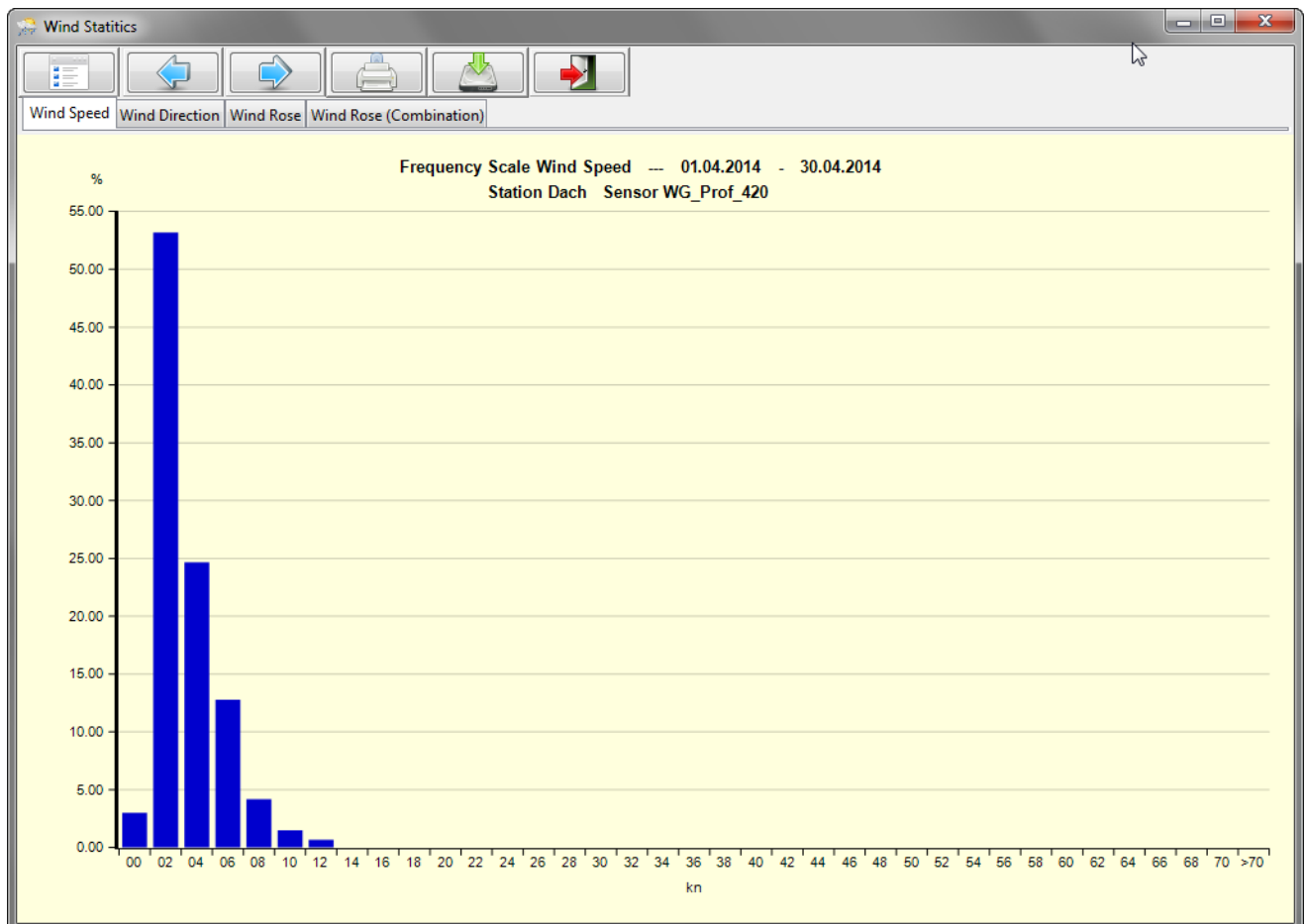
Time Range: Month ☒ Use NAV Scaling

Start Date: 01/04/2014

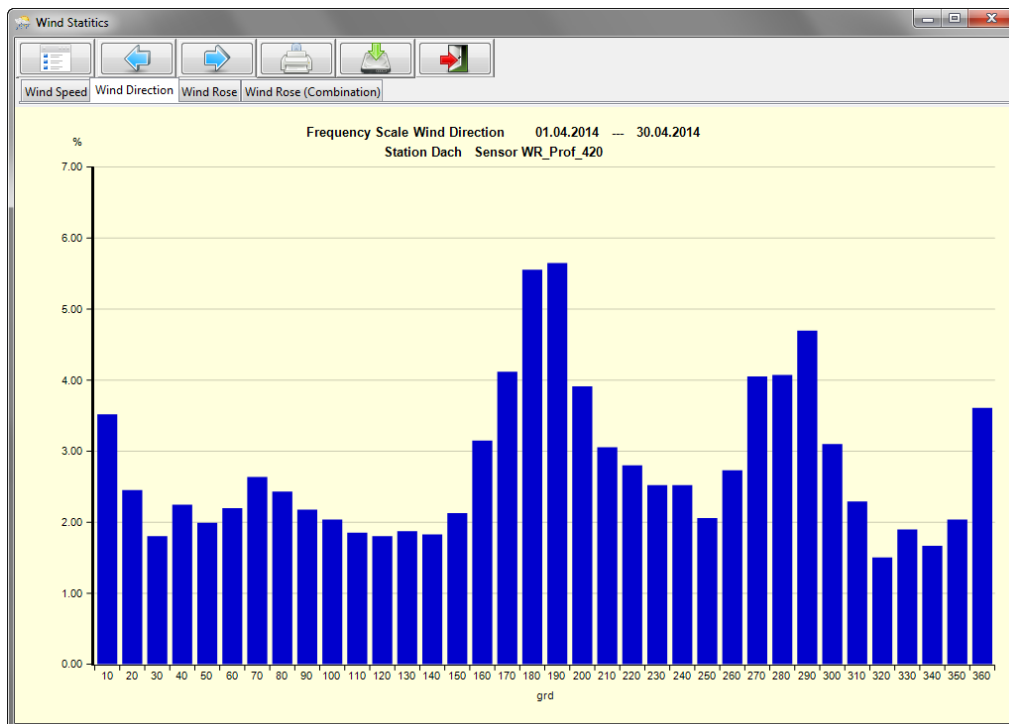
When starting up the wind statistics the window Menu Wind Statistics will open. Here a pair of wind direction sensors and wind speed sensors, as well as the time range and start date of the evaluation, will need to be specified. The checkbox Use NAV Scaling changes the wind statistics into the unit kn.



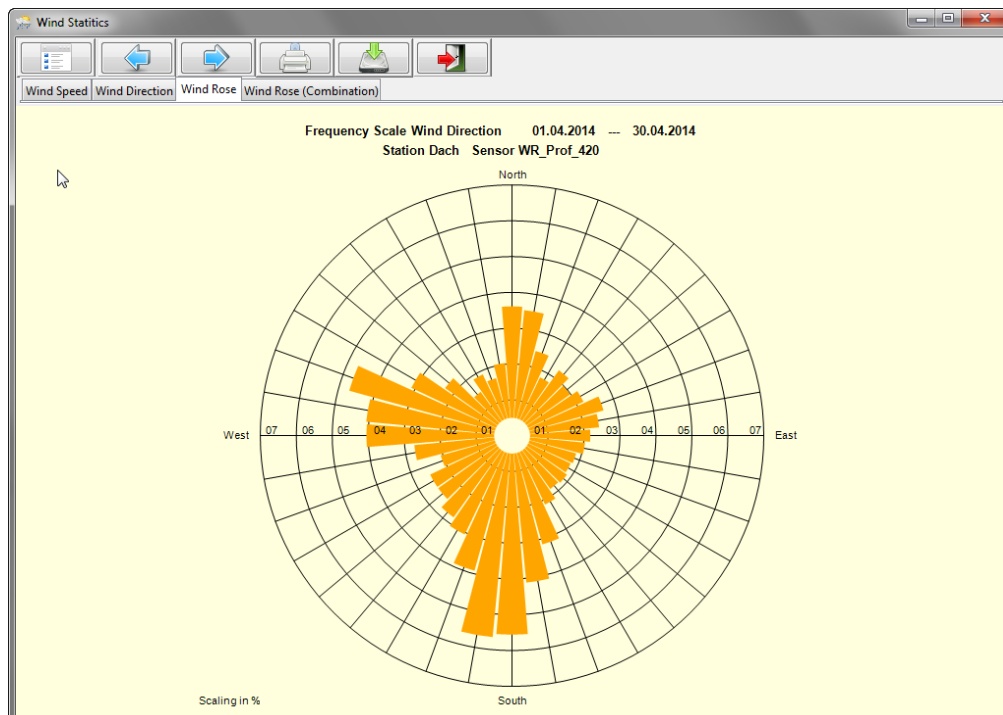
The button retrieves the evaluation.



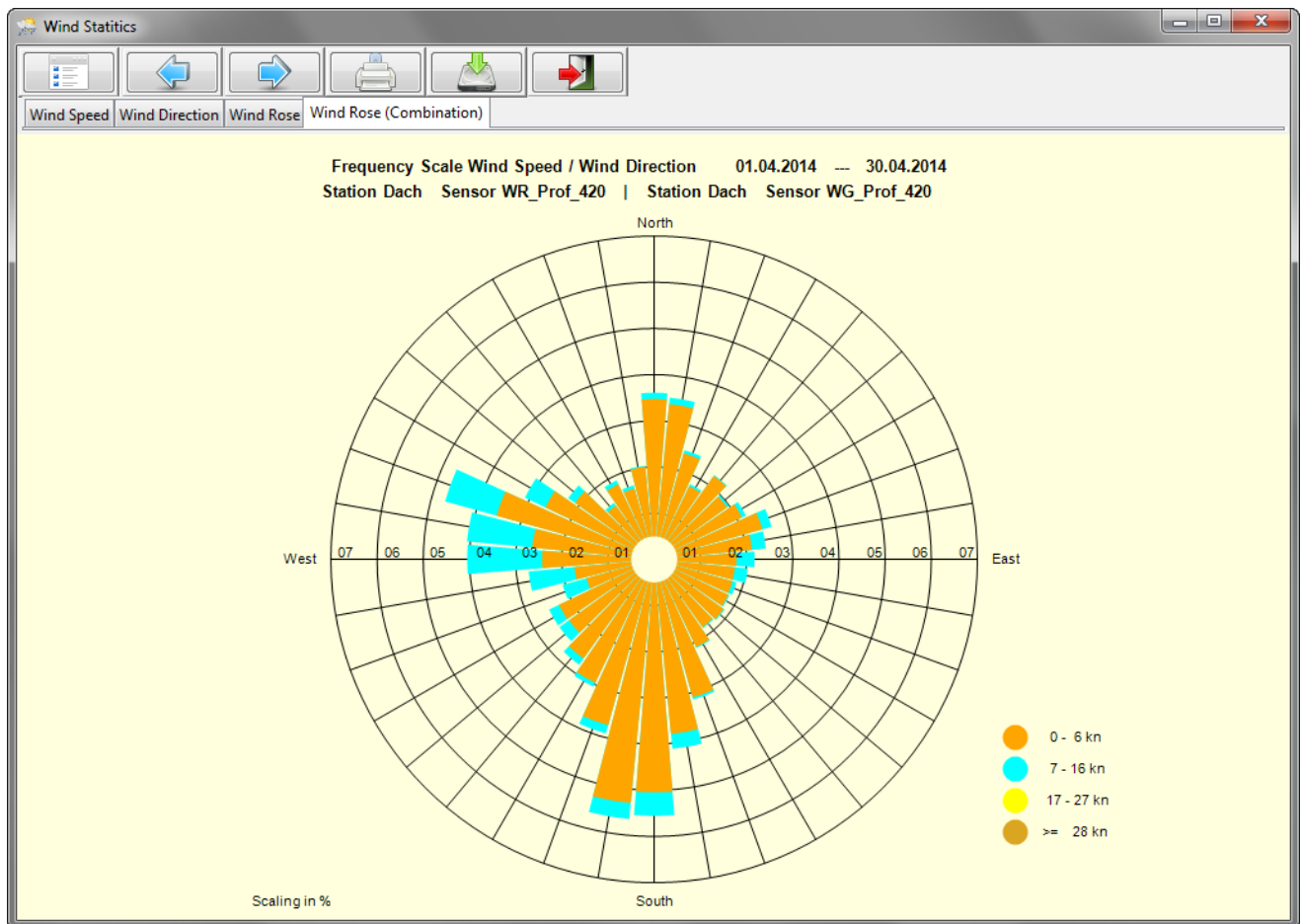
In the tab **Wind Speed** the percentage frequency distribution of the wind speed is displayed in increments of 1 m/s.



The tab **Wind Direction** contains the percentage frequency distribution of the wind direction in increments of 10°.




The tab **Wind Rose** represents the frequency distribution of the wind direction in the form of a wind rose.




The tab **Wind Rose (Combination)** shows a combined representation of the percentage frequency distribution of the wind direction and wind speed in the form of a wind rose.




With the help of the  and  button you can move chronologically backwards or forwards.




Clicking on the  button displays the previously described **Menu Wind Statistics** window.

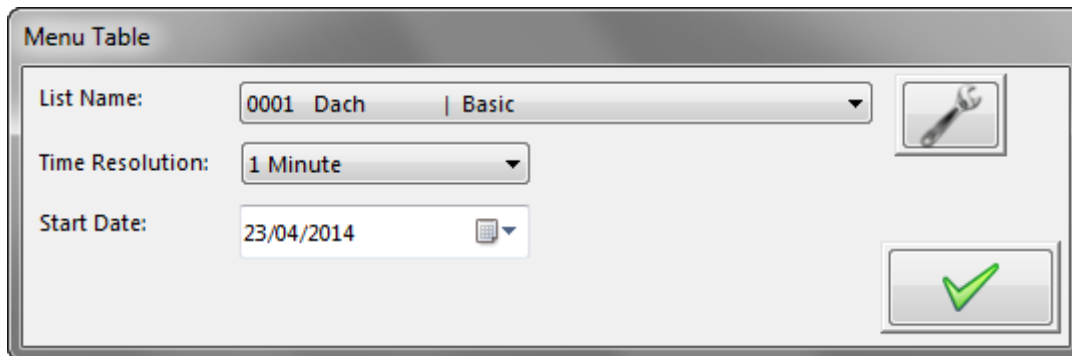


The graph can be printed out by clicking the  button. By using a pdf printer driver, the graphs can be stored in the form of a pdf file. In order to save the




graphs in another application, you can use the  button to export files in bmp, tif, gif, jpg or png format.


Tables



When starting this function the window **Menu Table** will open, in which an evaluation list can be selected. In this menu the time resolution of the display (1 minute, 10 minutes, 1 hour, 1 day) is defined. For stations whose average interval is not less than 10 minutes, the 1 minute time resolution cannot be used. For the start date, which is selected using the calendar control, the beginning of the evaluation list needs to be defined.

If the evaluation definition contains only precipitation sensors a checkbox will appear, with which the program can be prompted to only show rows with values greater than zero. This is especially useful if the data is shown with a time resolution of 1 minute and on the day of evaluation it has only rained very small amounts, or not at all. The evaluation will then only contain rows in which precipitation values are available.

The  button leads to a function with which new evaluation lists can be created or existing lists can be edited.

By clicking the  button the data will be loaded and presented in a table.

Tables

List Name: 00010001 Dach | Basic

	Date Time	Dach WR_Prof_020 AVR Grd	Dach WG_Prof_020 AVR m/s	Dach WR_Prof_420 AVR Grd	Dach WG_Prof_420 AVR m/s	Dach PT100 AVR Grd C	Dach Feuchte AVR %	Dach SP-Lite AVR W/qm	Dach Druck AVR hPa
1	00:01	266.0	0.0	260.1	0.7	10.10	100.0	0	
2	00:02	254.2	0.1	245.6	0.9	10.10	100.0	0	
3	00:03	240.2	0.1	235.4	1.1	10.07	100.0	0	
4	00:04	234.3	0.2	228.7	1.1	10.00	100.0	0	
5	00:05	226.7	0.1	227.7	1.1	9.91	100.0	0	
6	00:06	223.4	0.1	227.0	0.8	9.88	100.0	0	
7	00:07	239.7	0.1	237.9	0.8	9.84	100.0	0	
8	00:08	254.5	0.0	251.7	0.7	9.77	100.0	0	
9	00:09	268.9	0.0	268.3	0.5	9.72	100.0	0	
10	00:10	254.5	0.0	246.4	0.6	9.69	100.0	0	
11	00:11	240.7	0.1	229.4	0.9	9.67	100.0	0	
12	00:12	208.8	0.0	211.9	0.7	9.63	100.0	0	
13	00:13	200.5	0.0	197.5	0.8	9.62	100.0	0	
14	00:14	188.4	0.2	183.8	1.2	9.59	100.0	0	
15	00:15	191.6	0.2	189.3	1.2	9.52	100.0	0	
16	00:16	192.1	0.1	184.6	1.0	9.49	100.0	0	
17	00:17	166.1	0.0	163.5	0.8	9.45	100.0	0	
18	00:18	131.5	0.0	121.9	0.6	9.43	100.0	0	
19	00:19	106.8	0.0	99.8	0.3	9.41	100.0	0	
20	00:20	117.3	0.0	140.8	0.2	9.40	100.0	0	
21	00:21	358.6	0.0	326.8	0.2	9.38	100.0	0	
22	00:22	313.5	0.0	300.5	0.6	9.35	100.0	0	
23	00:23	271.7	0.0	263.6	0.8	9.34	100.0	0	
24	00:24	276.8	0.1	254.7	0.7	9.30	100.0	0	
25	00:25	298.3	0.0	270.6	0.5	9.29	100.0	0	
26	00:26	289.0	0.0	270.6	0.1	9.29	100.0	0	
27	00:27	262.3	0.0	254.1	0.6	9.28	100.0	0	
28	00:28	261.8	0.0	253.7	1.1	9.23	100.0	0	
29	00:29	253.7	0.0	257.8	0.8	9.18	100.0	0	
30	00:30	261.0	0.0	249.5	0.6	9.15	100.0	0	
31	00:31	297.5	0.0	288.1	0.7	9.13	100.0	0	
32	00:32	278.8	0.0	277.3	0.8	9.11	100.0	0	

The tables are horizontally and vertically scrollable



With the help of the and button you can move chronologically backwards or forwards.



Clicking on the button displays the previously described **Menu Table** window.



The contents of the table can be printed out by clicking the button. In the printer dialogue select portrait, so that a maximum of 6 data columns and one date and time column will be printed on one sheet. If the printer is set to landscape mode, increase the number of column containing values to 9, with the addition of a column for date and time. By using a pdf printer driver, the graphs can be stored in the form of a pdf file.

In order to make the contents of the tables accessible for other applications, you can



use the button to export files in csv, xls or xml format.

Export ASCII / EXCEL / XML

Format

☒ ASCII (CSV) ☐ EXCEL (XLS / BIFF) ☐ XML ☐ Execute EXCEL

☐ Add Caption

Target File: