

IN-E-SW21-V1_13	Rotronic AG Bassersdorf, Switzerland
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SW21 Software

Instruction Manual

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1 CP11

When a CP11 indicator is connected to the PC, the SW21 Software can be used to:

- o Change the device description (a user defined text)
- o Synchronize the CP11 internal clock with the PC date and time
- o Change the time interval used to record data
- o Download the recorded data to the PC

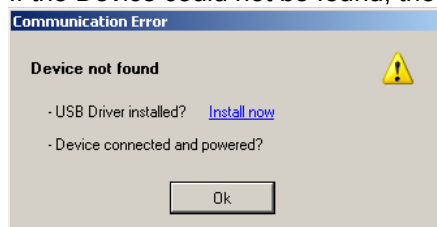
Connect the device to the PC and open the SW21 Software.

The first step is to select the CP11 tab in the Tool form and to read (discover) the device by clicking on the blue link labeled "Read device"



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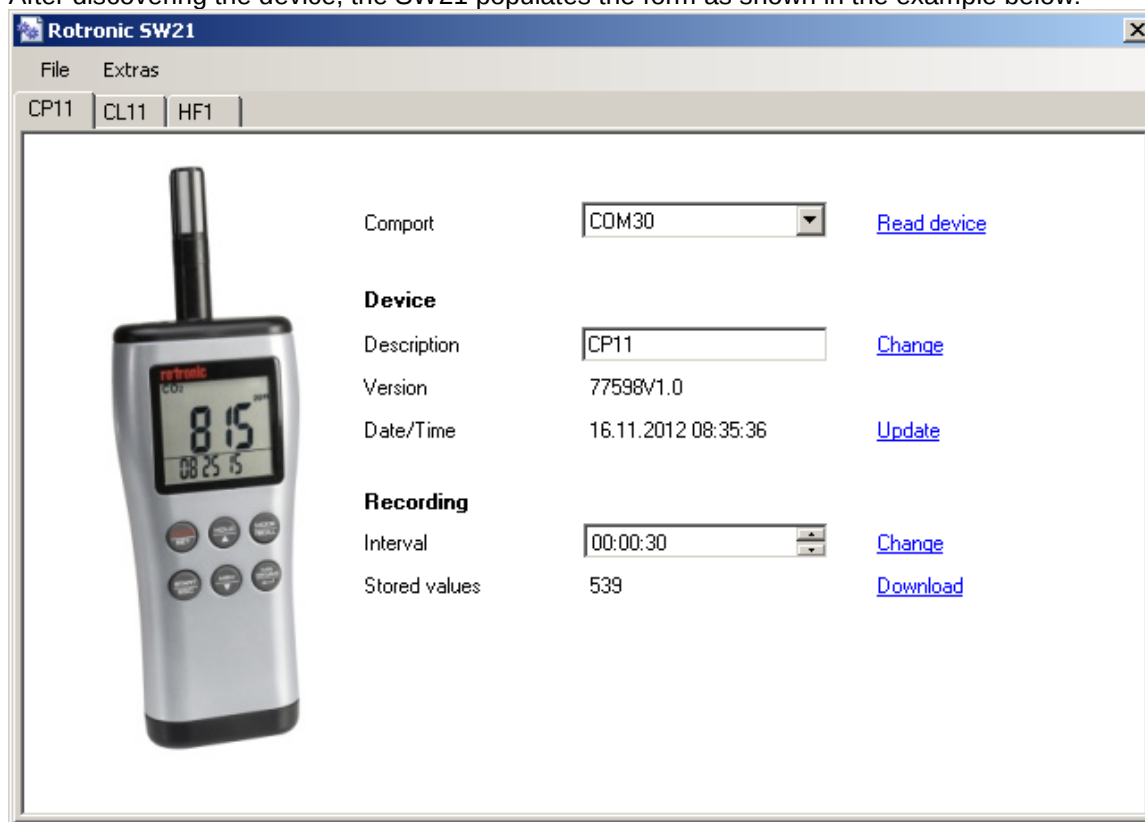
If the Device could not be found, the following Dialog will appear:



Click on the blue link labeled “Install now” to install the USB Driver.

Note: The Device must be unplugged before installation of the driver.

After discovering the device, the SW21 populates the form as shown in the example below:



To save the changes made to the fields “Description” or Log Interval”, click on the corresponding blue link labeled “Change”.

To synchronize the CP11 with the PC clock date and time, click on the blue link labeled “Update”.

Click on the blue link labeled “Download” to download the recorded data to the PC. Data cannot be downloaded while the CP11 is in the process of recording data. Stop data recording from the CP11 keypad prior to downloading data.

SW21 automatically opens the data file in Chart View. See the Chapter “Chart View”.

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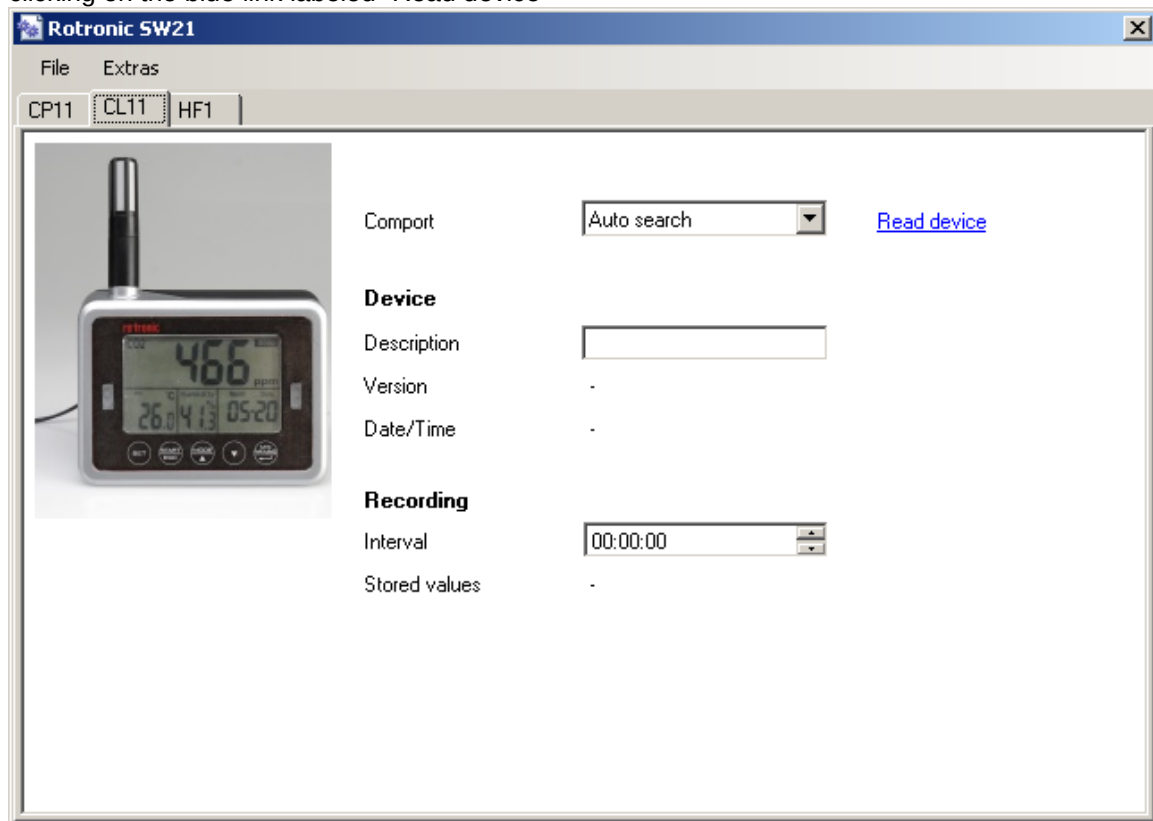
2 CL11

When a CL11 indicator is connected to the PC, the SW21 Software can be used to:

- o Change the device description (a user defined text)
- o Synchronize the CL11 internal clock with the PC date and time
- o Change the time interval used to record data
- o Download the recorded data to the PC

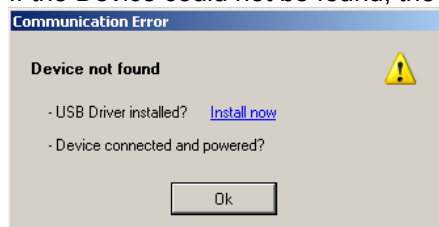
Connect the device to the PC and open the SW21 Software.

The first step is to select the CL11 tab in the Tool form and to read (discover) the device by clicking on the blue link labeled "Read device"



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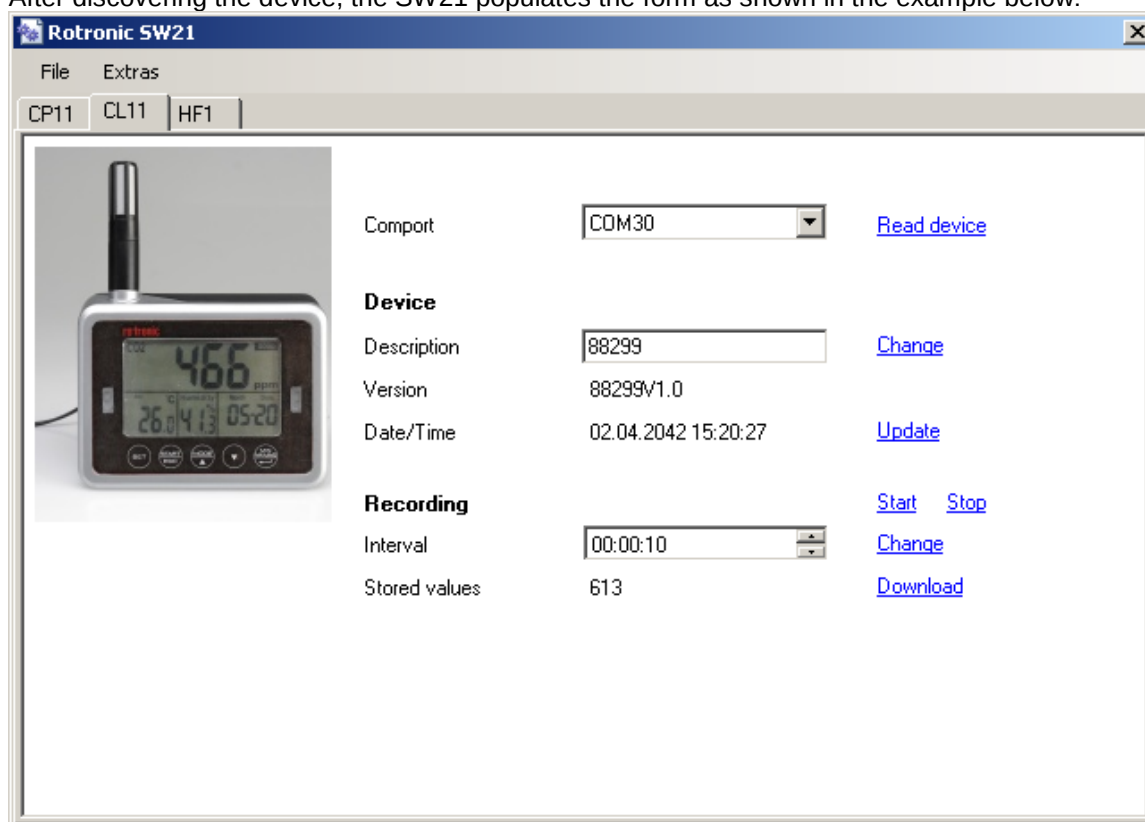
If the Device could not be found, the following Dialog will appear:



Click on the blue link labeled “Install now” to install the USB Driver.

Note: The Device must be unplugged before installation of the driver.

After discovering the device, the SW21 populates the form as shown in the example below:



To save the changes made to the fields “Description” or Log Interval”, click on the corresponding blue link labeled “Change”.

To synchronize the CL11 with the PC clock date and time, click on the blue link labeled “Update”.

To start or stop the data recording, corresponding blue link labeled “Start” or “Stop”.

Click on the blue link labeled “Download” to download the recorded data to the PC. Data cannot be downloaded while the CL11 is in the process of recording data. Stop data recording from the CL11 keypad or click on the blue link labeled “Stop” prior to downloading data. SW21 automatically opens the data file in Chart View. See the Chapter “Chart View”.

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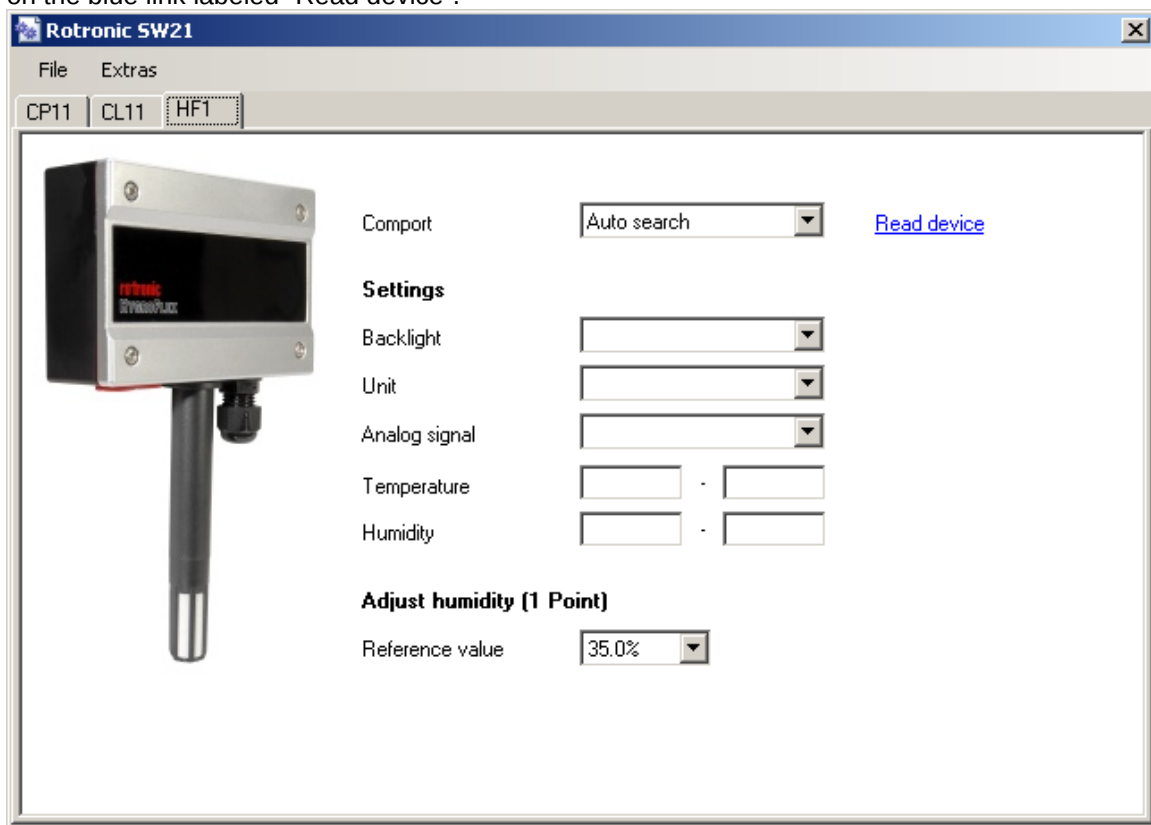
3 HF1

When a HF1 Transmitter is connected to the PC, the Device Configuration Tool can be used to:

- o Switch the Backlight On/Off
- o Select the temperature unit (°C or °F)
- o View the type of analog output signal, without necessarily being able to change it
- o Change the humidity and the temperature range / scale
- o Do a 1-point adjustment of the humidity signal

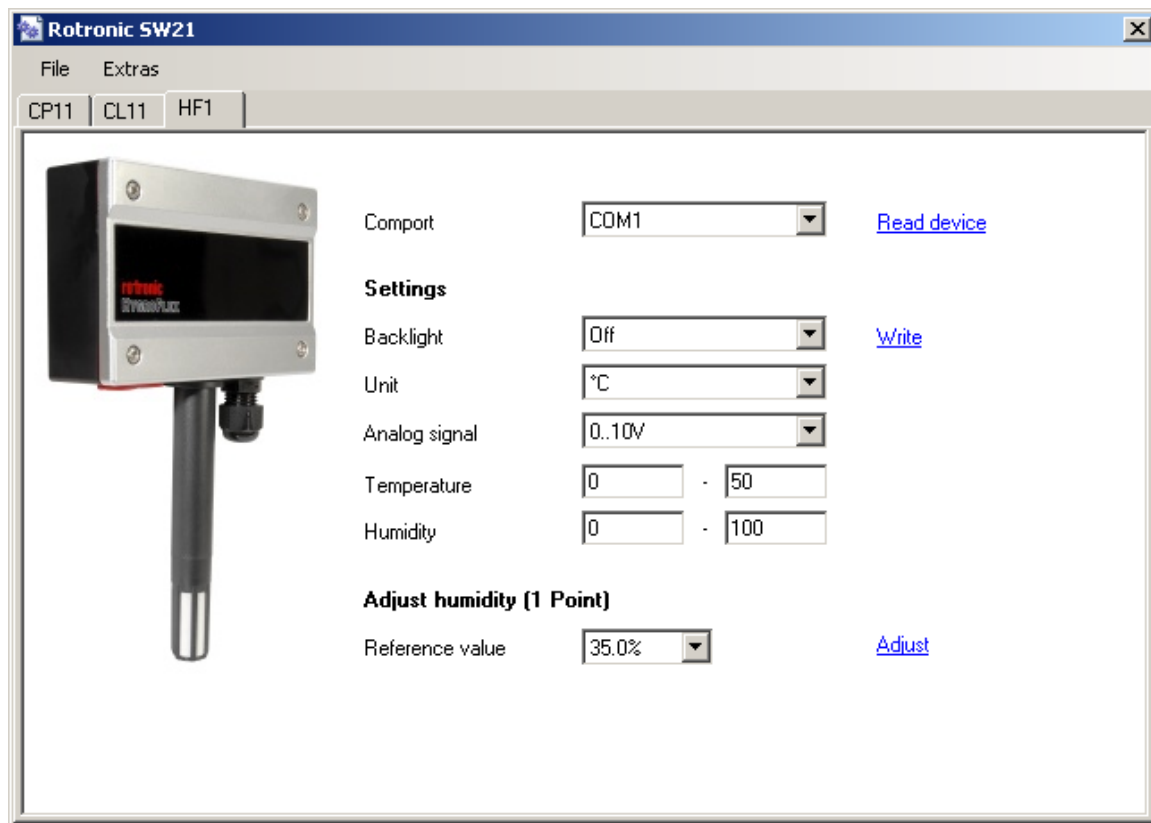
Connect the device to the PC and open the SW21 Software.

The first step is to select the HF1 tab in the form and to read (discover) the device by clicking on the blue link labeled "Read device".



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After discovering the device, the Software populates the form as shown in the example below:



To save your changes, click on the blue link labeled “Write”.

To make a 1-point humidity adjustment:

- o Expose the probe of the HF1 to a stable environment with a known humidity value. The Humidity can only be adjusted at 35 %RH or 80 %RH.
- o Wait for the probe of the HF1 to equilibrate with the reference environment.
- o When the HF1 is at equilibrium with the environment, click on the blue link labeled “Adjust”. The adjustment takes about 30s, do not unplug the device during adjustment.

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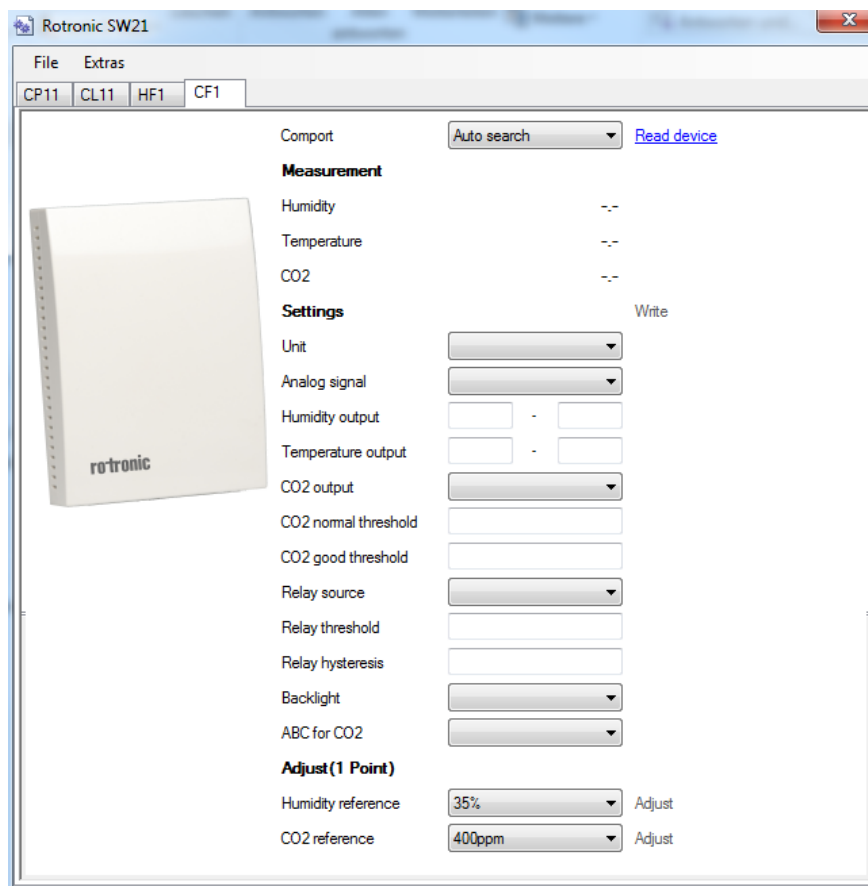
4 CF1

When a CF1 Transmitter is connected to the PC, the Device Configuration Tool can be used to:

- o Select the temperature unit (°C or °F)
- o Select the type of analog output signal, without necessarily being able to change it
- o Change the humidity and the temperature range / scale
- o Select the CO2 output range / scale
- o Change the CO2 normal threshold (yellow LED)
- o Change the CO2 good threshold (green LED)
- o Select the relay source
- o Change the relay threshold and hysteresis
- o Switch the Backlight On/Off
- o Enable/Disable ABC (automatic baseline correction) for CO2
- o Do a 1-point adjustment of the humidity signal
- o Do a 400 ppm adjustment of the CO2 signal

Connect the device to the PC and open the SW21 Software.

The first step is to select the CF1 tab in the form and to read (discover) the device by clicking on the blue link labeled "Read device".



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After discovering the device, the Software populates the form as shown in the example below:

The screenshot shows the Rotronic SW21 software window. It has a menu bar with 'File' and 'Extras'. Below the menu bar are tabs for 'CP11', 'CL11', 'HF1', and 'CF1'. The 'CF1' tab is selected. The interface is divided into two main sections: 'Measurement' and 'Settings'.

Measurement Section:

- Comport: COM10 (dropdown menu) with a [Read device](#) link.
- Humidity: 24.4%rh
- Temperature: 24.5°C
- CO2: 810ppm

Settings Section:

- Unit: °C (dropdown menu)
- Analog signal: 4...20mA (dropdown menu)
- Humidity output: 0 - 100 (range input)
- Temperature output: 0 - 50 (range input)
- CO2 output: 0...2000 (dropdown menu)
- CO2 normal threshold: 1400 (input field)
- CO2 good threshold: 900 (input field)
- Relay source: CO2 (dropdown menu)
- Relay threshold: 250 (input field)
- Relay hysteresis: 1000 (input field)
- Backlight: On (dropdown menu)
- ABC for CO2: On (dropdown menu)

Adjust (1 Point) Section:

- Humidity reference: 35% (dropdown menu) with an [Adjust](#) link.
- CO2 reference: 400ppm (dropdown menu) with an [Adjust](#) link.

A blue link labeled 'Write' is located next to the 'Settings' section.

To save your changes, click on the blue link labeled "Write".

To make a 1-point humidity adjustment:

- o Expose the CF1 transmitter to a stable environment with a known humidity value. The Humidity can only be adjusted at 35 %RH or 80 %RH.
- o Wait for the CF1 to equilibrate with the reference environment.
- o When the CF1 is at equilibrium with the environment, click on the blue link labeled "Adjust". The adjustment takes about 30s, do not unplug the device during adjustment.

To make a 400 ppm CO2 adjustment:

- o Expose the CF1 transmitter to a stable environment with 400 ppm
- o Wait for the CF1 to equilibrate with the reference environment.
- o When the CF1 is at equilibrium with the environment, click on the blue link labeled "Adjust". The adjustment takes about 30s, do not unplug the device during adjustment.

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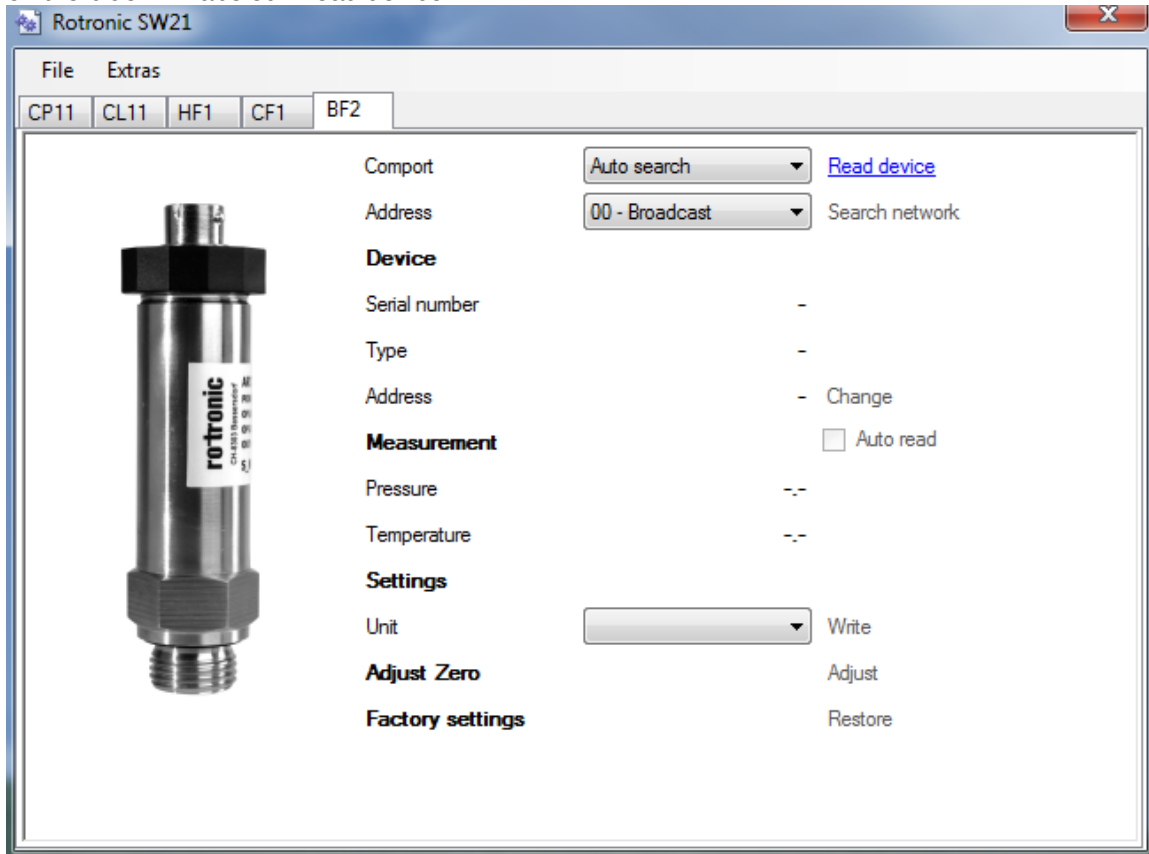
5 BF227

When a BF2 Transmitter is connected to the PC, the Device Configuration Tool can be used to:

- o Select a new Network Address (1-99)
- o Select an automatic update of the output values (pressure and temperature)
- o Change the Unit Settings (kPa,MPa,mH2O,bar,Psi,mbar)
- o Do a 1-point adjustment of the pressure signal
- o Do a restore to the factory settings

Connect the device to the PC and open the SW21 Software.

The first step is to select the BF2 tab in the form and to read (discover) the device by clicking on the blue link labeled "Read device".



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After discovering the device, the Software populates the form as shown in the example below:



The screenshot shows the Rotronic SW21 software window. On the left is an image of a cylindrical pressure transmitter with a label that reads 'rotronic'. To the right of the image are various settings:

- Comport:** A dropdown menu showing 'COM10' with a [Read device](#) link.
- Address:** A dropdown menu showing '14 - 1435839' with a [Search network](#) link.
- Device:**
 - Serial number:** 1435839
 - Type:** BF227-EAPFXX7
 - Address:** 14 with a [Change](#) link.
- Measurement:**
 - ☒ **Auto read**
 - Pressure:** 0.974bar
 - Temperature:** 26.12°C
- Settings:**
 - Unit:** A dropdown menu showing 'bar' with a [Write](#) link.
- Adjust Zero:** A [Adjust](#) link.
- Factory settings:** A [Restore](#) link.

To save your changes, click on the blue link labeled "Write".

To make a 1-point pressure adjustment:

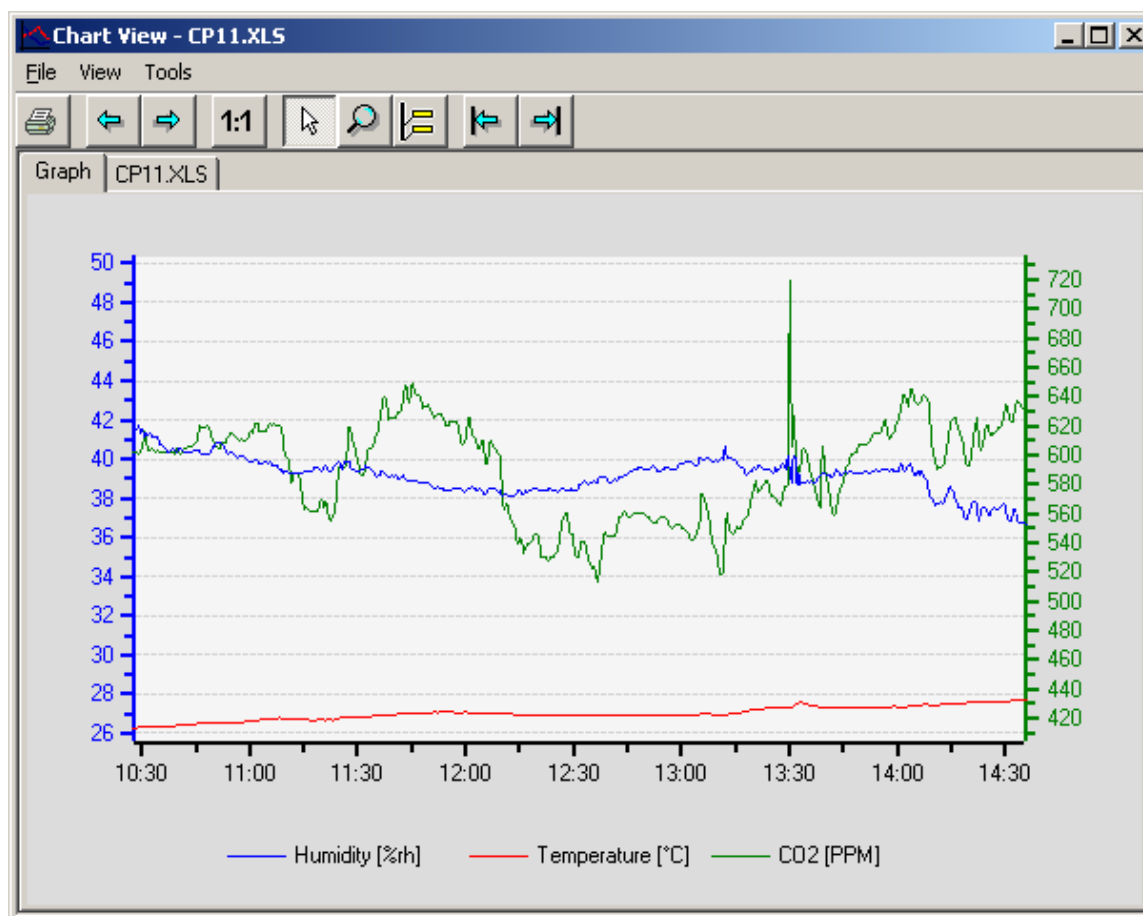
- o This adjustment is for zero clearing.

Set back to factory settings:

- o If you press restore "factory settings", the transmitter go back to delivery status. Also the network address.

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6 Chart View



6.1 Menu

6.1.1 File

- **Save:** Saves a file located on the PC to its original location under the original file name. This command will not work when the file is Write protected.
- **Save As:** saves a copy of the file to any location on the computer. The file is always saved in the .XLS format. This command can be used to do the following:
 - Convert a binary log file (LOG) to the text format (XLS) and save the converted file to disk, under a new name (the original LOG file is still available)
 - Save a write protected file under a new name after adding notes, text boxes, etc.
 - Save the results of overlaying several files under a new file name. The new file separately retains the file header and data of each original file.

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- **Print:** the effect of this menu item depends which tab (Graph or File Name/Data Table) is selected in Chart View. The command opens the Windows printer form and prints the graph or table on the specified printer.

Graph: the log file name is added to the top of the graph when the graph is being printed.

Data table: the file header is always printed before the table. It is possible to select with the mouse a number of lines from the data table, prior to printing. Depending on the selection made within the Windows printer form, either all of the data or just the selected lines will be printed.

- **Exit:** exits Chart View

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6.1.2 View

- **Initial View** ¹: returns the graph to the view used by Chart View when opening the file.
- **Previous View** ¹: after using the magnifying glass or zooming on a graph area several times, returns the graph to the previous view ²
- **Next View** ¹: changes the graph to the next view when the magnifying glass or zoom has been used several times ²
- **Graph time window** ¹: used to select the time window corresponding to the graph X axis. The available selections appear in a submenu: Hour, Day, Week, Month or Year. For example, selecting Day, makes the X axis correspond to a 24-hour time window.
- **Next time window** ¹: used to increment the origin of a time window (X axis) by one time window unit. For example, if the graph is displaying a week worth of data, this command changes the graph to the following week.
- **Previous time window** ¹: used to decrement the origin of a time window (X axis) by one time window unit. For example, if the graph is displaying a week worth of data, this command changes the graph to the previous week.
- **Notes**: shows or hides the Notes tab. This tab allows extensive notes to be associated with the log file. To retain these notes, a write protected file should be saved under a new name

¹ this item is grayed out when the Graph tab is not selected

² this item is context sensitive and is grayed out when not applicable

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6.1.3 Tools

- **Statistical data:** this menu item opens a new tab in Chart View that displays the number of data points, minimum, maximum, average and standard deviation for each parameter that was recorded. A sub-menu offers the choice of displaying statistical information only for the data currently shown on the graph (for example after zooming) or for an entire log file. When the graph consists of more than one log file (overlays), all of the data is being used regardless of its origin.

Mean kinetic temperature: this additional data element is given only for temperature and uses the value "83" for activation energy.

Graph	70011053.LOG	Statistical data
70011053.LOG Process description: HygroGen / HygroClip 35/80/10/35 Device name: HyGen NT3 Firmware version: V1.2b Device serial number: 0034277001 Type: V2.0/33220033 Total: 61 Data Points Humidity %RH Minimum: 21.68 (11/24/2006 18:26:05) Maximum: 21.73 (11/24/2006 18:26:55) Average: 21.690 Standard deviation: 0.008 Temperature °C Minimum: 22.99 (11/24/2006 18:26:55) Maximum: 23.07 (11/24/2006 18:26:25) Average: 23.035 Standard deviation: 0.019 Mean Kinetic Temperature: 23.035		

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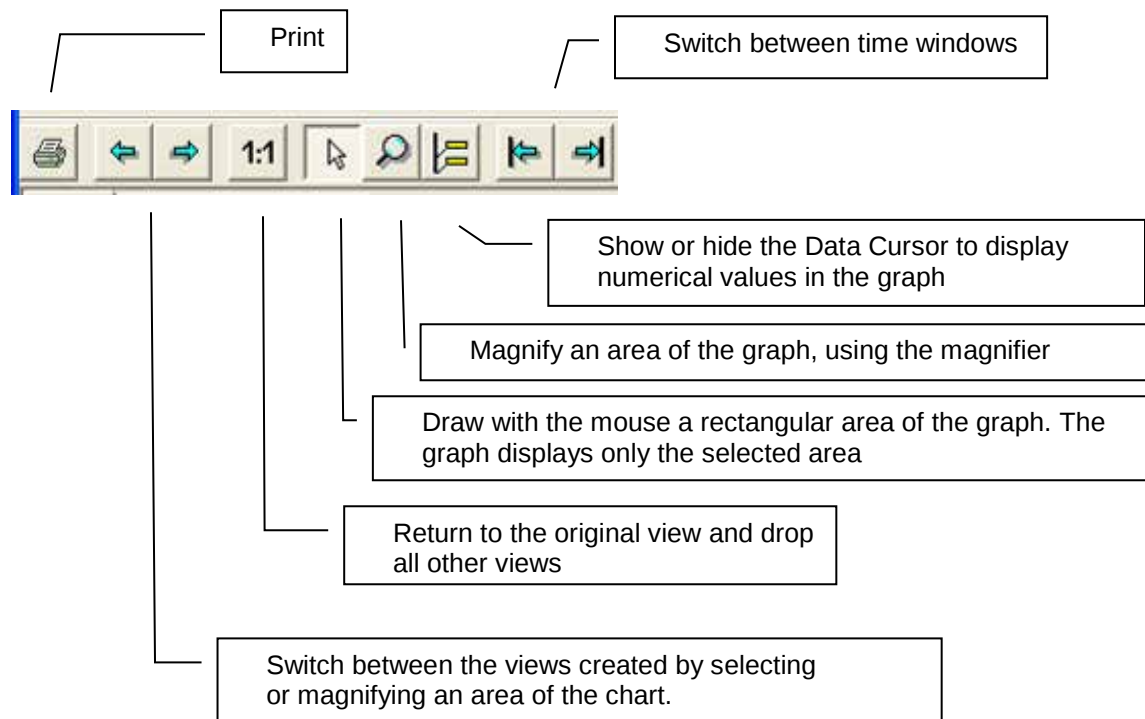
When high and low alarm values have been programmed for an input, each individual occurrence of an alarm condition is reported in a separate block (Alarm 1, Alarm2, etc.). A separate block is also used for each recorded parameter, even when alarm conditions occur simultaneously. Contiguous data points which are out-of-limits values are reported as one block. Statistical information is provided for each block.

```
Alarm 1
Humidity
Number of data points: 9
From: 10/18/2005 14:54:00
To: 10/18/2005 14:56:00
Minimum: 47.75 (10/18/2005 14:56:00)
Maximum: 88.71 (10/18/2005 14:54:30)
Average: 71.410
Standard deviation: 14.922

Alarm 2
Temperature
Number of data points: 4
From: 10/18/2005 14:54:00
To: 10/18/2005 14:54:45
Minimum: 25.98 (10/18/2005 14:54:00)
Maximum: 28.59 (10/18/2005 14:54:30)
Average: 27.483
Standard deviation: 1.093
```

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6.2 View Data Toolbar

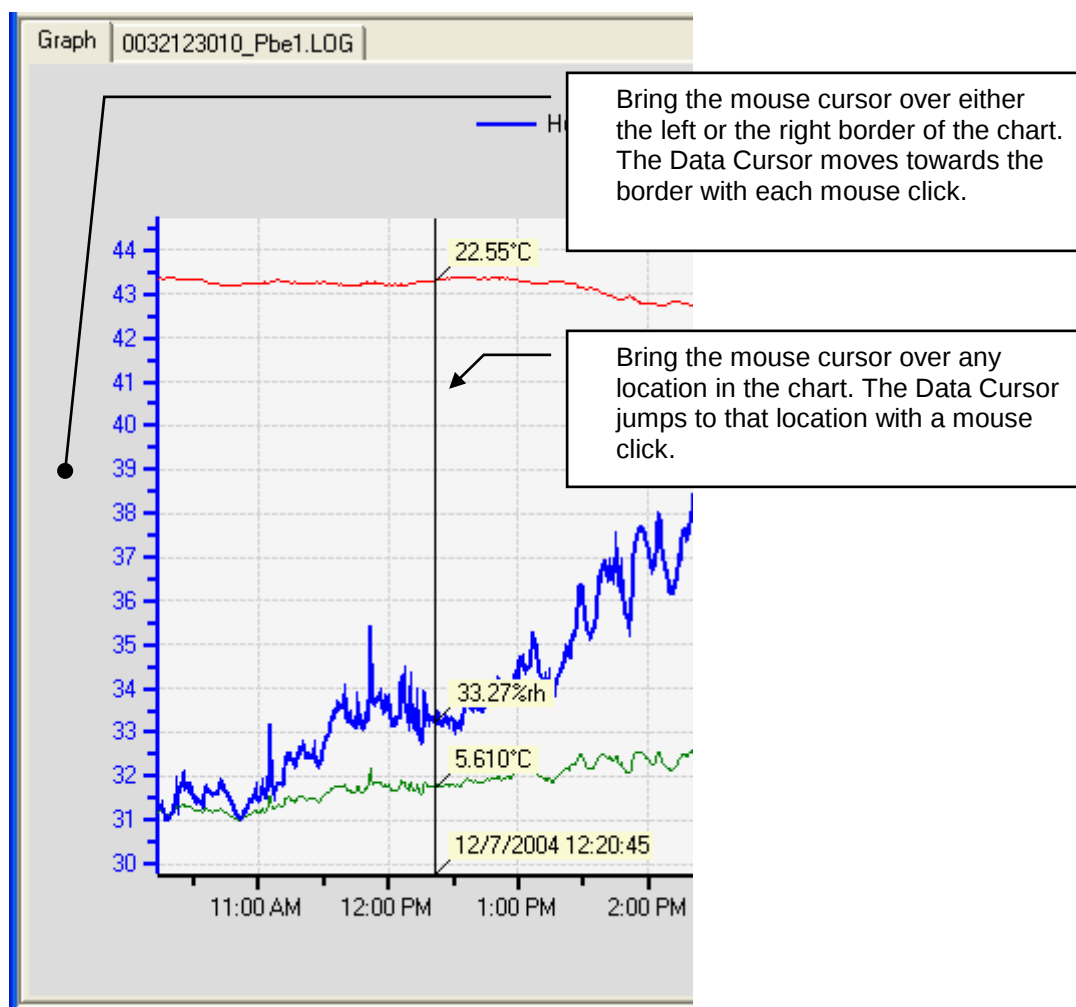


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6.3 Graph Tab

6.3.1 Using the Data Cursor

In the toolbar, left click on the Data Cursor button. The Data Cursor appears as a vertical bar on the graph. Labels appear next to the data cursor to display numerical values.

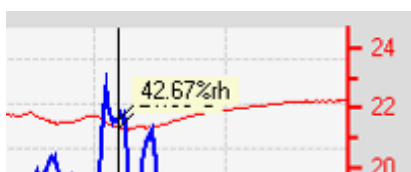


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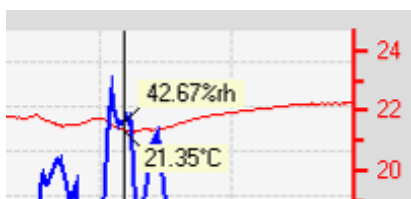
6.3.2 Displaying hidden data labels

When two traces on the chart are close one to the other, it may happen that the data labels attached to the Data Cursor are on top one of the other. Left clicking with the mouse on any visible label makes the label move 90° clockwise and can be used to uncover a hidden label.

a) The temperature data label is hidden behind the humidity data label



b) Left click with the mouse on the humidity data label. The temperature data label becomes visible.



6.3.3 Selecting which traces are displayed by the graph

Right clicking with the mouse over any area of the graph opens the following menu:

- Insert text box (see Adding text notes directly in the graph, further down)
- Show all traces: displays all available traces on the graph

To select a trace, bring the mouse cursor over one of the chart traces. The cursor changes to a hand. Right click with the mouse to select the trace. The color of the trace changes and the following menu opens:

- Hide this trace
- Show this trace only
- Show alarm band: shows on the graph the alarm settings (if any) for the selected trace. The alarm band can be displayed only for one trace at a time. The alarm band appears as two shaded areas of the same color as the trace. To hide, deselect the menu item.
- Attach text/data box (see further down)
- Show all traces

Note: showing the alarm band for one of the traces usually results in a different scale.

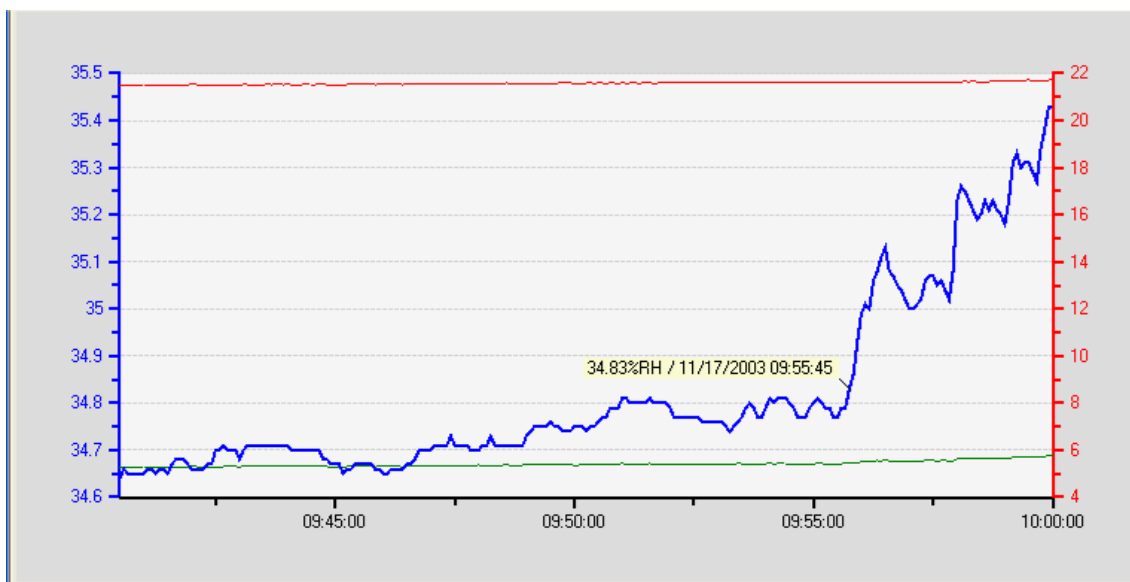
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6.3.4 Attaching a text / data box to a trace

Bring the mouse cursor close to a trace. Right click with the mouse when the cursor changes to a hand. Doing this selects the trace and also opens a small menu box.

The menu item Attach Text/Data Box creates a text / data box that is attached to a specific location of the selected trace. Upon selecting this menu item, the mouse cursor changes to a cross. By default, it fills the text box with data corresponding to the location of the mouse cursor. Move the mouse cursor (cross) to any location on the trace. The data in the box changes as the box moves along the trace.

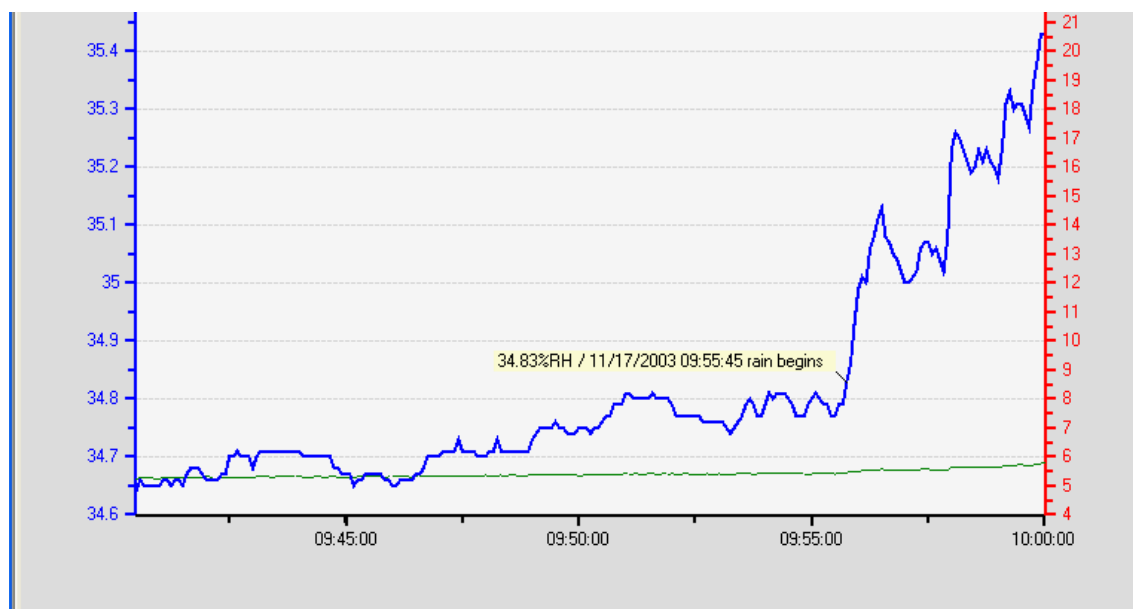
To attach the text box, left click with the mouse when the cursor is at the desired location. The mouse cursor jumps inside the text box and the text inside the box is highlighted (edit mode). Left click with the mouse to edit the contents of the box. Use the keyboard arrow keys to move the cursor to a location where text is to be inserted or added. When done, left click with the mouse anywhere in the graph.



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Bringing the mouse cursor over the text box makes the cursor change into a hand. At that time, right clicking with the mouse opens another menu:

- Edit text box: use to add text after the numerical data or to replace the numerical data with text
- Delete text box
- Orientation: use one of the available options to place the text box at a convenient location



6.3.5 Adding a text note directly in the graph

To create a text note that is not attached to a specific trace, use the following two steps:

a) Create and position the text box: bring the mouse cursor to the location of the graph where you want to add a text note. Right click with the mouse. This opens a small menu. In this menu, select Insert Text Box. The mouse cursor changes to a cross and a textbox is created with the text: "Enter text here". Move the cross to the desired location of the text box and left click with the mouse.

b) Enter the text: right click with the mouse on the text box. This opens a small menu. Select Edit Text Box and type the text in the blue area. When done, left click with the mouse

6.3.6 Deleting a text note or text/data box

Make sure that the Data Cursor is not visible. Bring the mouse cursor over the text/data box. The cursor changes to a hand (the hand appears only when the data cursor is not visible). Right click with the mouse. This opens a small menu. Select Delete Text Box and left click with the mouse

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6.4 Data Table / File Name Tab

Clicking on the file name tab, displays both the contents of the file header (top of the form) and the data in the form of a table (bottom of the form). Values that correspond to an alarm condition (if any was specified for the probe in Device Manager) are shown over a red background.

Chart View - CP11.XLS

File View Tools

Graph **CP11.XLS**

[#S] Device Info
Version = 77598V1.0
Serial number = CP11
File name = CP11.XLS
Interval = 00:00:05

[#1]
Humidity = %rh

Number	Date	Time	Humidity %rh	Temperature °C	CO2 PPM
1	24.08.2012	12:58:00	51.90	26.94	408
2	24.08.2012	12:58:30	52.30	26.94	410
3	29.08.2012	10:28:41	41.50	26.28	602
4	29.08.2012	10:29:11	41.70	26.33	600
5	29.08.2012	10:29:41	41.30	26.33	604
6	29.08.2012	10:30:11	41.50	26.33	604
7	29.08.2012	10:30:41	41.10	26.33	617
8	29.08.2012	10:31:11	41.30	26.33	610
9	29.08.2012	10:31:41	41.20	26.33	603
10	29.08.2012	10:32:11	41.30	26.33	603
11	29.08.2012	10:32:41	41.20	26.33	604
12	29.08.2012	10:33:11	41.10	26.33	604
13	29.08.2012	10:33:41	41.10	26.33	602
14	29.08.2012	10:34:11	41.20	26.33	603
15	29.08.2012	10:34:41	41.00	26.33	602

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7 DOCUMENT RELEASES

Release	Software Version	Date	Notes
_10	1.0.0		Original release
_11	1.1.0		Minor updates
_12	1.2.0	March 2015	Added CF1 device
_13	1.3.0	November 2015	Added BF227 device