DeltaLog6 software manual   Ver.1.4
Introduction

The DeltaLog6 application allows you to manage all HD2013-D rain gauge functions simply and intuitively from your PC. The data in the memory can be downloaded and displayed in tabular and graphic form, the measurements detected by the instrument can be displayed and saved on file, and the data can be printed and exported in Excel® format…

Preliminaries - DeltaLog6 start-up

Connect the instrument to a free serial port on the PC using the appropriate serial cable supplied with the application.

Start the application by double clicking on the application icon on the desktop or select the Deltalog6 item in the DeltaOhm folder of the Start menu.

Press the Connect button or select the command *Instrument >> Connect*: the application will automatically search and connect to the serial line to which the instrument is connected.

If the connection was successful the following symbol will appear to the lower right:

Connected to COM1 9600 8,N,1

A failed connection will be indicated by the following symbol:

Error : connection failure

If the application is unable to connect to the instrument please refer to the section in this manual: Trouble shooting.

Attention: until the connection with the PC is enabled, do not use the instrument keyboard so that possible functioning conflicts will be avoided.

Definition of the functional areas

Deltalog6 appears after the data has been downloaded, as in the following window:
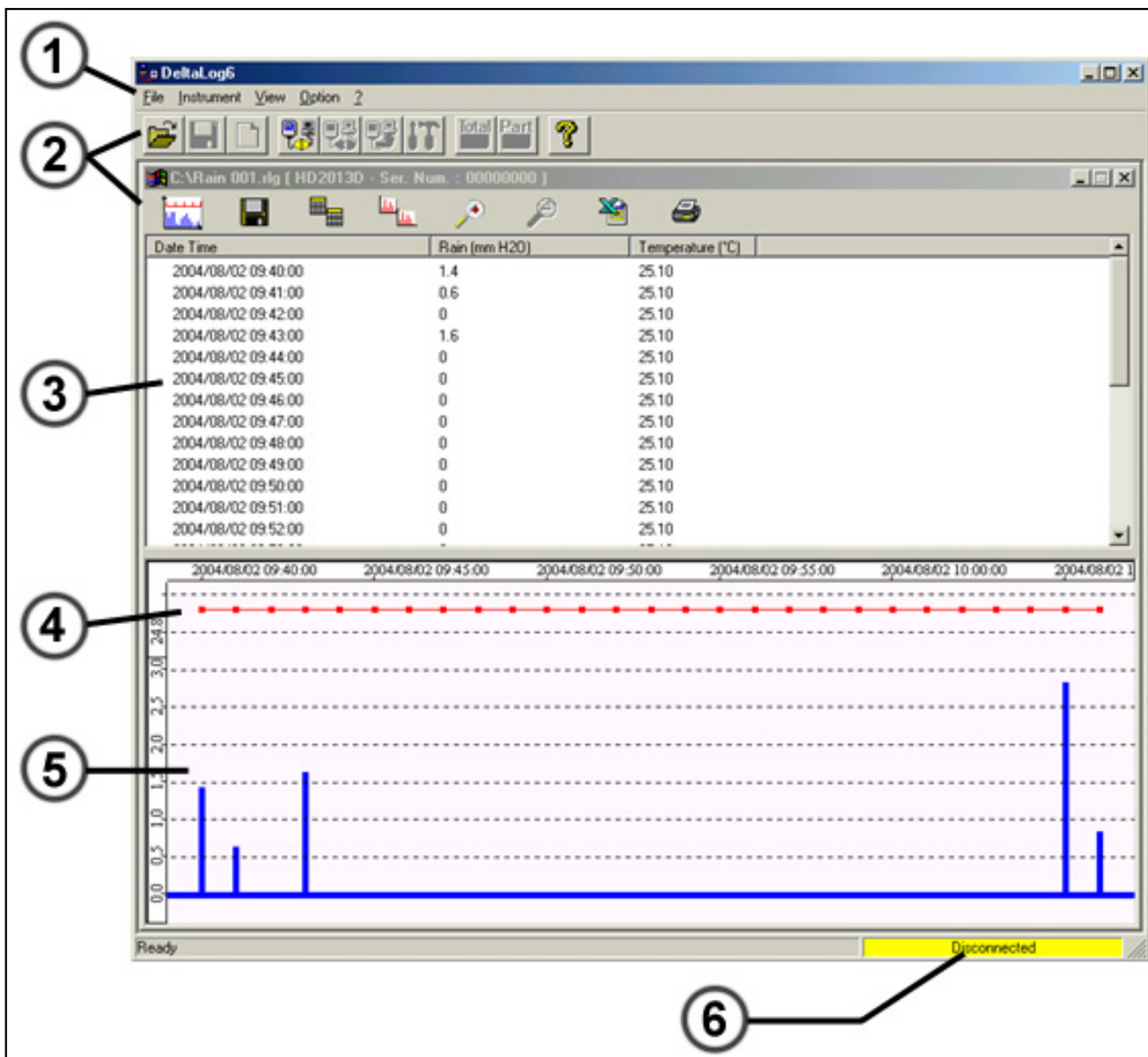
The following functional areas can be seen:

1. Main Menu
2. Command bar
3. Data table
4. Temperature graphic display
5. Precipitations graphic display
6. Serial port connection status

Main Menu

The upper part of the page contains the main menu from which all functions offered by the Deltalog6 application can be accessed.

All that is necessary to activate a function is the opening of the drop-down menu where the function is located and its selection with the mouse.

The various commands are outlined below. For an in depth study on their use, please read the following paragraphs which
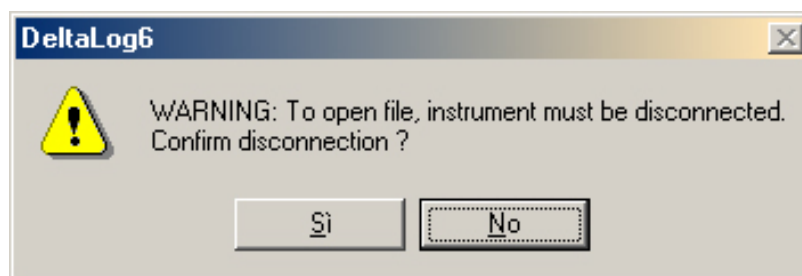
describe the main functions.

A) File Menu

Open
Opens a saved file. The files managed by the application have an **rlg** extension.
If the instrument is connected to the PC, the Open File command cannot be used to open a file: you must disconnect first.
Clicking on the Open File button brings the following message up on the screen:

Press *Yes* to disconnect the instrument and open the file, press *No* to remain connected.

Save As…
Saves the file allowing the folder to be selected.

Printer Setup…
Opens the dialog box in which the printer options can be set.

Print Graph Setting If the printed graph dimensions are not the same as the displayed ones, it's possible to manually set the width and length of graph. The two squares length and width can be modified by the user selecting the CUSTOM name.
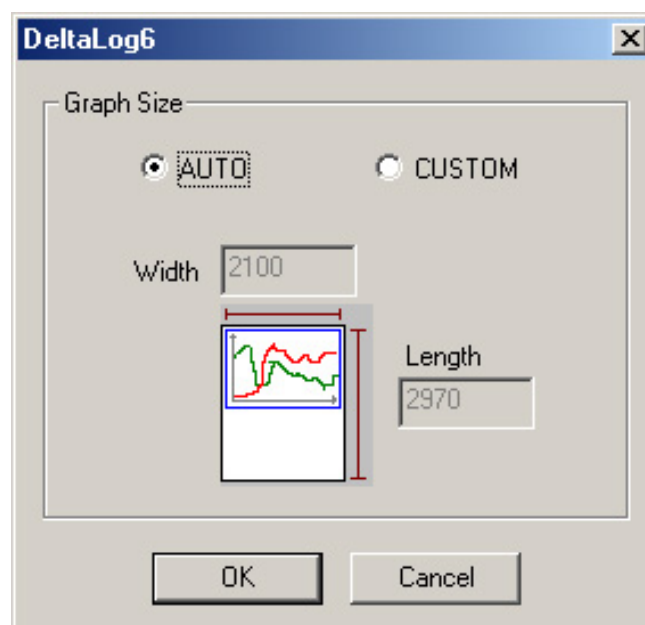
Exit
Closes the application.

B) Instrument Menu

Connect
Connects the DeltaLog6 application to the instrument: if the *Autodetect* function in Options >> Port Settings is enabled, the serial port parameters are set automatically.

Disconnect
Disconnects the DeltaLog6 application from the instrument enabling the use of the serial port for other applications.

Instrument Info
Opens a window with the information for the instrument connected to the application.

Download data
Transfers the data stored during the instrument 's functioning to the PC. During this phase a window is displayed showing the download progress and the number of records saved. This windows allows the download operation to be interrupted.

New session
Deletes the data downloaded to the PC and opens a new measurement session. As a precaution, the application asks if you wish to save the measurements to a file. In continuous recording mode, the command does not delete the data from the PC's hard disk but only from the screen as they are automatically saved during the download.

Instrument Setup Opens the configuration page of the instrument connected to the PC.

Clear partial counter Deletes the rain quantity counter that is displayed in normal mode.

Clear total counter Deletes the rain quantity counter displayed in menu mode.

C) View Menu

Instrument bar It enables or disables the Instrument bar

Status bar It enables or disables the Status bar

D) Options Menu

Port settings Opens the dialog box to set or display the parameters of the serial communication port. The function is only enabled when there is no instrument connected. By checking the *Autodetect* option, the application sets the port parameters automatically. ([trouble shooting](#))

E) Menu ? (Help)

DeltaLog6 Info Information on the software version.

DeltaLog6 Licence Software license with the final user.

DeltaLog6 Handbook DeltaLog6 software manual.

Toolbar

To speed up the use of the system, some operations accessible trough the menus are also located on the command bar immediately beneath the main menu in the form of buttons. Another command bar is located in the window to display the downloaded graphic and data table.

 File >> Open Opens a file of previously saved data.

 File >> Save as… Saves the data downloaded from the instrument.

 Instrument >> New Session Starts a new session and deletes the data downloaded to the PC: before closing the application asks you to save the data.

Instrument >> Connect Starts the instrument's connection to the PC. If the [Autodetect](#) function is enabled, the serial port parameters are automatically set by the application without the operator needing to intervene.

Instrument >> Disconnect Disconnects the instrument at the end of the work session. This command enables other applications to use the serial port.

Instrument >> Download data Starts the download of data from the mini datalogger to the PC.

Instrument >> Instrument Setup Opens the configuration page of the instrument.

Instrument >> Clear total counter Deletes the rain quantity counter displayed in menu mode.

Instrument >> Clear partial counter Deletes the rain quantity counter that is displayed in normal mode.

? >> DeltaLog6 Handbook DeltaLog6 software manual.

The command bar located in the window to display the downloaded data presents the following functions, many of which are not accessible through the menus:

Select interval to group Selects the interval according to which the events should be grouped

File >> Save as… Saves the data downloaded from the instrument

Copy Table to Clipboard Copies the data of the table to the Windows Clipboard

Copy Graph to Clipboard Copies the graph picture to the Windows Clipboard

Tool/Zoom + Enlarges an area of the graph

Tool/Zoom - Reduces an area of the graph

Export to Excel Opens the Excel application and sends it the current data. The Microsoft Excel application must be installed on the PC in order for this feature to be enabled.

Print Prints the current data, a choice can be made between the table or the graph. The title of the print is requested.

Serial port connection status

Symbol indicating the connection status and parameters between DeltaLog6 and the serial port.

Depending on the connection status the symbol can display the following values:

| Disconnected | DeltaLog6 disconnected from the serial port |

| Error : connection failure | DeltaLog6 disconnected from the serial port because an error occurred during the attempted connection |

| Connected to COM1 9600 8,N,1 | DeltaLog6 correctly connected with relevant parameters |

Instrument Setup

With the instrument connected, press the Setup button to open the dialog box and set the parameters.

The window is divided into three sections:

Instrument: summarizes the current instrument settings - this tab cannot be edited by the user.

Date - Time: if necessary, used to update the instrument's date and time; by checking the *Update instrument Date-Time to PC Date-Time* item, the *computer* boxes receive a white background and the instrument date and time are automatically updated with the PC date and time. Updating to the new date entered can be forced by manually typing the new date in these boxes.

Tipping bucket settings:

Unit of Measurement selects between metric or imperial units of measurement.

Resolution (mm/tip) or *resolution (inch/tip)* selects the quantity of rain for each overturning of the bucket.

Contact type defines the type of at-rest output from the rain bucket.

Alert mode it enables or disables the alarm: for example, if *contact type = normally closed* was selected and the bucket remains open, an alarm is generated on the instrument display (writing: *ERROR*).

Confirm the settings with the **APPLY** button or press *Cancel* to reset.
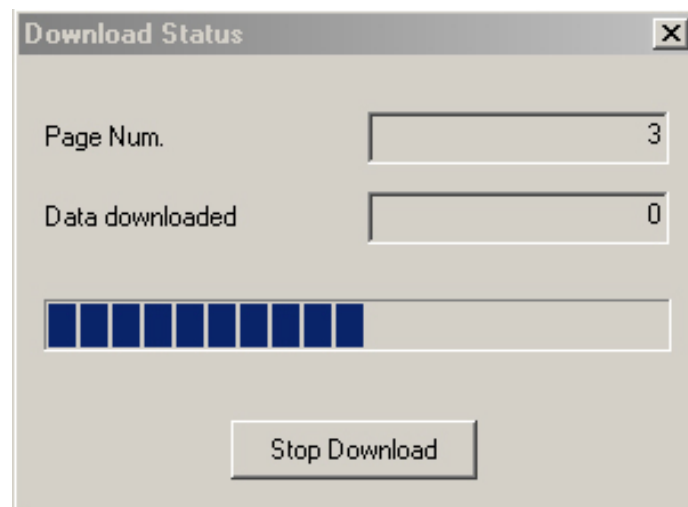
Download of data

To download the data contained in the datalogger memory, connect the serial cable to the PC, launch the DeltaLog6 application, connect the instrument (*Connect* button).
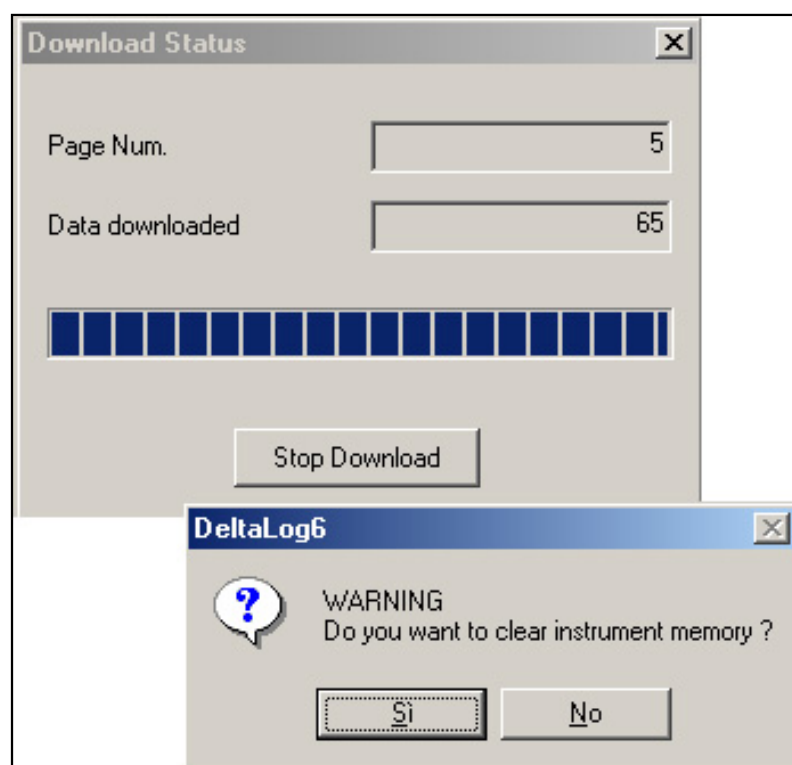
Press the *Download data on PC* button.

The files are sent to the PC in sequence: it is possible to see the file download progress in the *Download Status* window and to interrupt the operation with the *Stop Download* button.

Once the download is complete, it requests you to cancel the instrument memory contents:

The instrument memory is reset by pressing *YES* and on the next download only the new data will appear. On the contrary, the current data will be newly downloaded on the next download.

The downloaded data are presented in tabular or graphic form.

 Press the Disconnect button to disconnect the instrument. Unplug the serial cable.

Display of the data in tabular form

HD2013-D records the date and time of each emptying of the bucket and it records also the ambient temperature each 15 minutes time interval. DeltaLog6 will then group these events according to the time interval selected.

The data provided for each interval are date (in year/month/day format) and time (in hour/minutes/seconds format) of the beginning of the time interval, and the quantity of precipitation expressed in millimetres or inches and the ambient temperature.

Date Time	Rain (mm H2O)	Temperature (°C)	
2004/08/02 09:40:00	1.4	25.10	
2004/08/02 09:41:00	0.6	25.10	
2004/08/02 09:42:00	0	25.10	
2004/08/02 09:43:00	1.6	25.10	
2004/08/02 09:44:00	0	25.10	
2004/08/02 09:45:00	0	25.10	
2004/08/02 09:46:00	0	25.10	
2004/08/02 09:47:00	0	25.10	
2004/08/02 09:48:00	0	25.10	
2004/08/02 09:49:00	0	25.10	
2004/08/02 09:50:00	0	25.10	

The yellow attention triangle indicates that the date was changed by the user in between the 2 indicated recordings of the events.

| Date Time	mm H2O
⚠ 2003/01/02 03:07:48	0.20
⚠ 2003/01/02 03:05:44	0.60
2003/01/02 03:05:45	0.60
2003/01/02 03:05:46	0.80
2003/01/02 03:05:47	0.60
2003/01/02 03:05:48	0.80
2003/01/02 03:05:49	0.80
2003/01/02 03:05:50	0.20
2003/01/02 03:05:51	0
2003/01/02 03:05:52	0
2003/01/02 03:05:53	0
2003/01/02 03:05:54	0
2003/01/02 03:05:55	0

Display of the data in graphic form

This display allows to get an immediate view of precipitations and temperature trend. Precipitations quantity and temperature are stated in the same graph but in two separated areas, each one with its own ordinate. Possible grey vertical lines indicate a change of the date (the same as for the small triangle ⚠ in the tables)
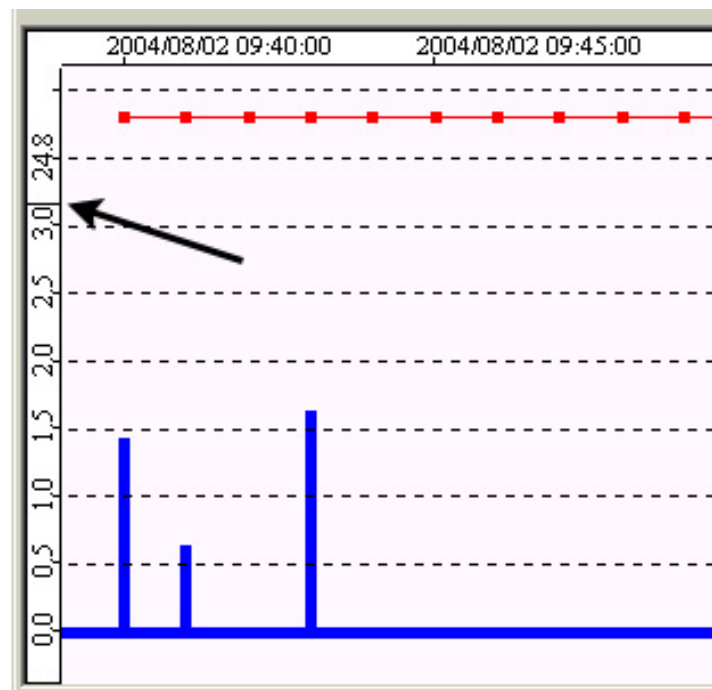
The value of the coordinates is displayed by moving the mouse over the graph.

With the mouse positioned in the graph area, you press its *right button* and a menu will appear with these commands:
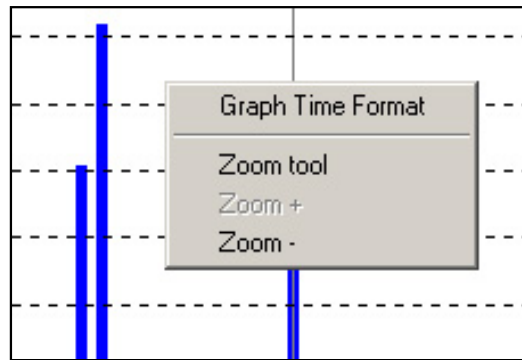

Graph Time Format: set the variable to display in the graph abscissa which can be: date and time, only date or only time.

Zoom enlarges a selected area of the graph.
To enlarge a portion of the graph, select the *Zoom tool* command. A selection frame will appear in the left corner at the top, and:
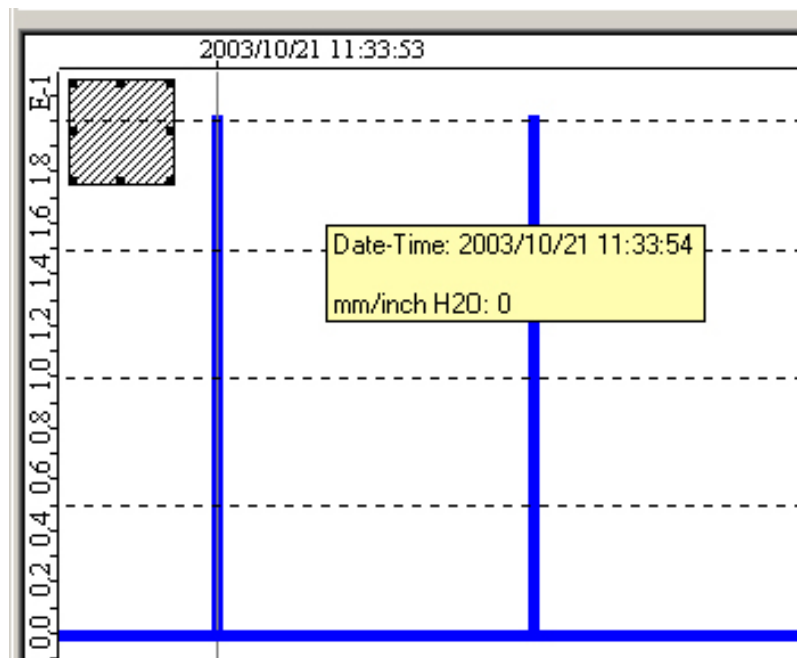
Click and hold down the left button of your mouse, move this frame to the area of the graph to be enlarged. Then, using the eight "selection handles" around the object, resize the selection area:
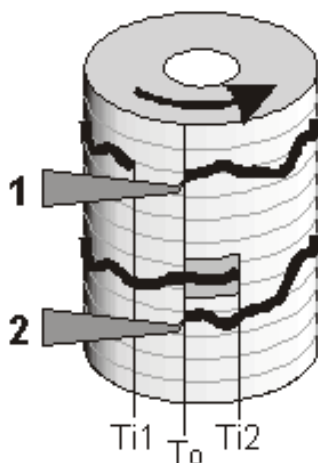
2003/10/21 11:33:53
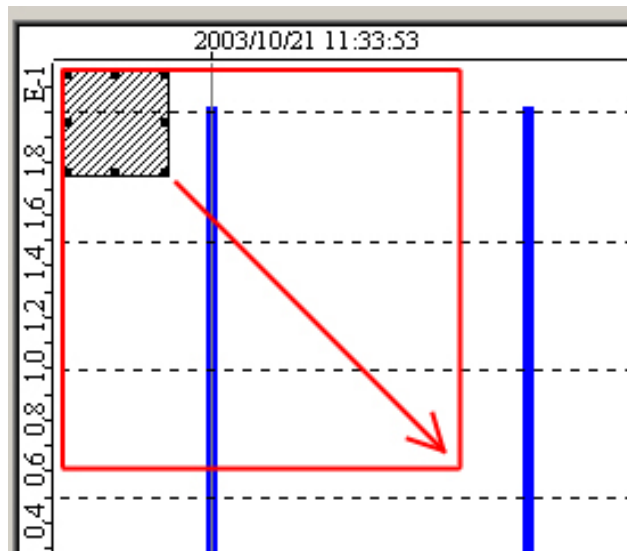
Now press the *Zoom+* button

To return to the default view press the *Zoom-* button

Continuous recording (infinite memory)

HD2013-D recording works like a strip chart recorder. The rain gauge memory can be compared to a complete turn of the paper roll. If recording starts at moment Ti1, in order to avoid losing useful data it is only necessary to download the data before Ti1 passes over T0, as you can see in the drawing on the side in correspondence of pen no. 1. On the other hand, if as in case 2, the initial moment Ti2 passes over To, the data contained in the darker rectangle are overwritten from Ti2 to To and therefore cannot be recovered. Each time the data download is performed, the memory returns to being completely free for new recordings: this is like applying a new paper strip on the strip chart recorder. The overwriting appears at the end of one of the 2 following events: after 2 years from the last data loading or, with a resolution equal to 0,2mm/tip, after 18.6m of precipitations. In this case, on the next download of data the application will indicate an *overrun*. Therefore, there will be a *hole* in the recording in correspondence of the first data of the last recording.

Trouble shooting failed connections

If the application does not connect, check the following:

Check that there are no active applications using the serial ports (e.g. Hyperterminal) on your computer. In such case close these applications and retry.

Check that the serial cable is correctly connected (do not use other cables as extensions as they could modify the colour correspondence of the cable on one side and the connector pins on the other).

If there are devices connected to other serial ports (e.g. a modem), they could be interfering with the DeltaLog6 application. In this case it is better to set the parameters of the serial port manually by selecting the *Port settings* item in the *Options* menu before starting the connection.
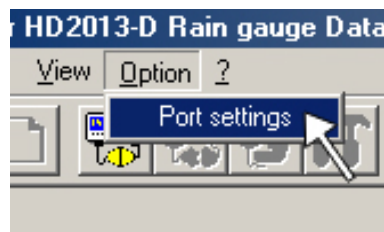
The serial port configuration window opens: by deselecting the *Autodetect* item, the port to which the instrument is connected can be selected
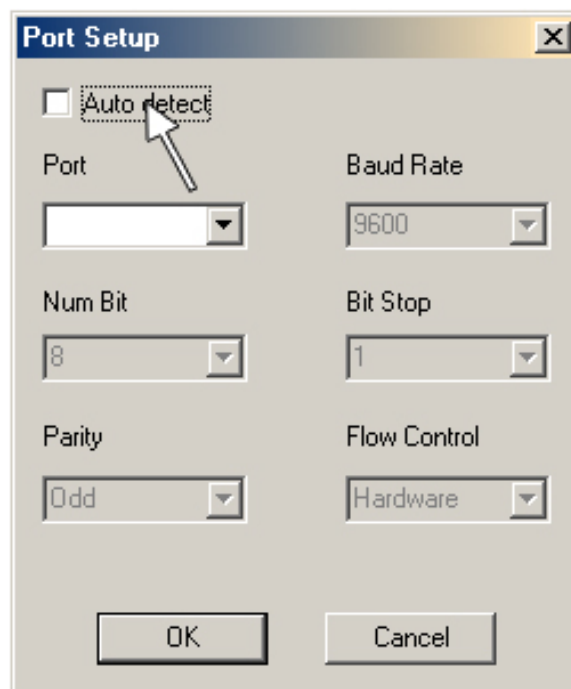
Printing problems

If you encounter problems during printing, try to update the printer driver by downloading it from the manufacturer's website.
Modify the dimensions of printed image selecting File >> Print Graph Setting.
If you did not handle the problem, use the Copy to clipboard feature to copy and paste the active window into another application: for example, to print a graph copy and paste it into Windows Paint and try printing it from this application.

Uninstall Deltalog6 software

During installation, the *Uninstall DeltaLog6* command is created in the DeltaOhm folder found in the Start menu. Click on it to uninstall the application and its components.

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