simex
Measurement & Control

QUICK GUIDE for

software

DAQ Manager

version: 1.0.2 or higher

Read the quick guide carefully before starting to use the program.
Producer reserves the right to implement changes without prior notice.

CONTENTS

Explanation of symbols used in the manual:

- This symbol denotes especially important characteristics of the software working. Read any information regarding this symbol carefully

1. GENERAL CHARACTERISTICS

DAQ Manager program enables download to your computer data recorded by the CMC-99 devices (e.g. temperature, humidity, pressure), and their visualization as tables and charts. Cooperation with CMC-99 devices is performed using portable USB FlashDrive.

2. USING OF „DAQ MANAGER" PROGRAM

After successful complete installation process, access to application can be obtained from system Start Menu under position "DAQ Manager". From this place you can safely uninstall this program in the future and the measurement data archived to this time will remain on your hard disk for later use.

2.1. FIRST RUN OF APPLICATION

After first starting of the program, the window shown in Figure 2.1.

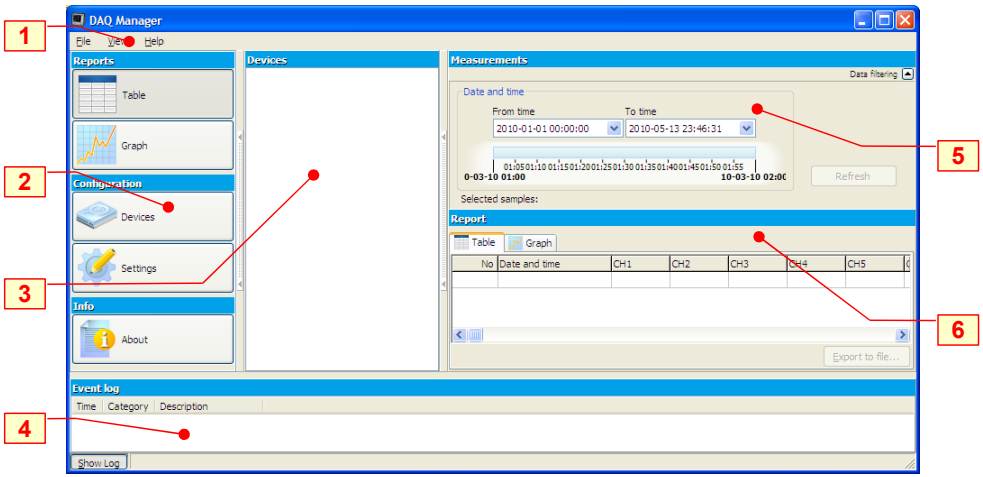


Figure 2.1. Window view at first run of application

Explanation of lements of the figure above:

1 - **Main Menu** - provides access to less frequently used functions of the program;

2 - **Side Menu** - allows access to the main functions of the program;

3 - **Devices List** - contains a list of devices for which the program has archived the data;

4 - **Event Messages Area** - allows to view events occurring in the program; Information that appear here are also saved to a file "EventLog.txt", which is located in the program directory.

5 - **Time Area** – allows to select the time period for create a table and graph

6 - **Report Area** – allows to view selected data in a table and graph form;
The measurement data shown in the table can be exported to *.csv file.

When you run the program first time, the **Devices List** is empty because the program doesn't have any information about devices and their data yet. The creation of a new device on the list is done automatically by downloading informations about the registered measurement data were saved on portable flash memory. To add a new device you only need to import its recorded data.

2.2. DATA IMPORTING

User can import measurement data, saved by the CMC-99 on a portable flash drive, to the software database using menu **File > Import measurements...**. If a flash memory is inserted into USB port while running the program, ***DAQ Manager*** will check its contents and when find any measurement data, displays window to select directory from which we can download new data.

2.2.1. Choice of data directory

The directory selection window allows you to choose a single device (a directory with a specific serial number of CMC-99). After directory is chosen it activates the button **[Import]** (*Figure 2.2*). Click on this button will start the process of importing data to the program database.

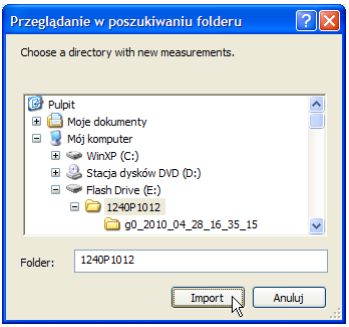


Figure 2.2. Directory selection window

2.2.2. Downloading Data

At the beginning of the importing process, software is analysing measurement data and checking which data have been changed and which are new. After that, software performs downloading if it's needed. User is informed about progress of operation by appropriate dialogue box, and should wait until the end of the process (when the **[Close]** button becomes active Figure 2.3).

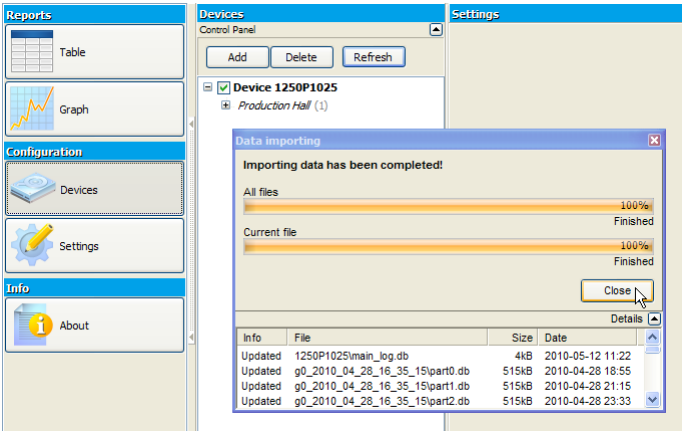


Figure 2.3. The process of data importing was successfully completed

When the import process was properly completed a new device called "Device SERIAL_NO" (where SERIAL_NO is a serial number of device from which data were collected) appears in the Devices List.

2.3. PARAMETERS OF DEVICES

Access to the parameters of devices from which data were collected, their groups, logs and channels can be obtained by clicking on the **[Devices]** button in the **Side Menu**. Certain parameters that relate to displaying and visualization of data, previously set in the device, can be changed here, to allow a more intuitive reports. After making changes, user must confirm it by clicking the **[Save]** button. The button **[Undo]** is used to restore the last saved parameters when an unexpected change happens.

2.3.1. Devices

Number of devices on the list is unlimited. After selecting one device from the list, DAQ Manager displays its properties (serial number, date and time of adding to ***DAQ Manager*** database and disk space occupied by all its data). User can change here the default name of the device and redefine the Ethernet Network parameters for the future use (Figure 2.4).

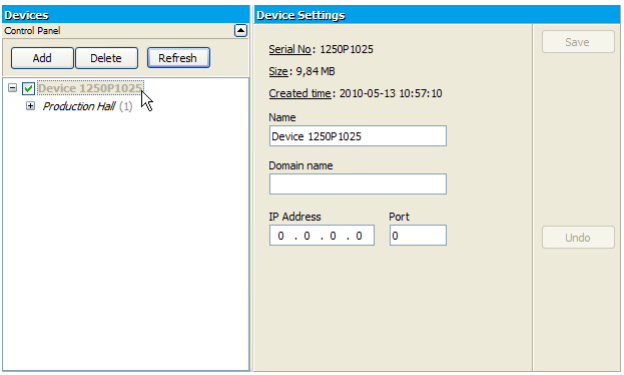


Figure 2.4. Device parameters

For user convenience (e.g. to make list more readable) each device can be hidden from the list of devices in the Reports by unchecking it on this list.

User can also permanently remove the device from the list by selecting one and clicking the **[Delete]** button. This operation can also permanently delete all the data related to selected device, so It is strongly recommended to be very careful while performing this operation because there is no possibility to recover deleted data. To prevent against accidental data deleting, software asks user if all data related to device being removed should be also deleted from the hard drive.

2.3.2. Groups

Each device can have up to 10 groups (depends on CMC-99). For each of them user can specify the name and description (Figure 2.5). It is recommended to use groups names similar to names of corresponding groups in CMC-99 devices.

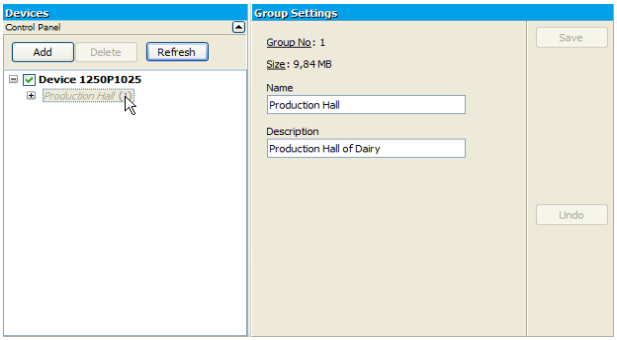


Figure 2.5. Group parameters

2.3.3. Logs

After expanding one of the groups, a list of logs appears (Figure 2.6). Their number is unlimited and depends on how often you change parameters in the CMC-99 device, which caused creation of a new log, and also on maximum allowed by CMC-99 size of single record. The name of the log is the date of its creation. Parameters of each log are for information purposes only.

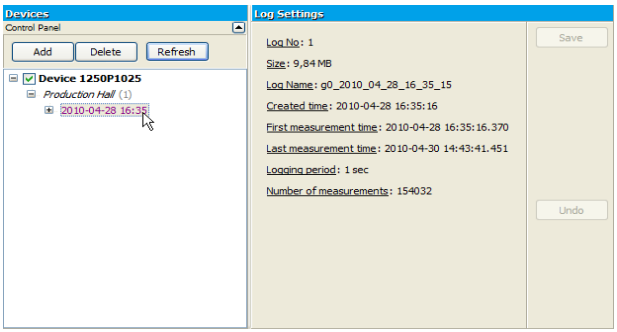


Figure 2.6. Log parameters

2.3.4. Channels

After expanding of any log, user receive a list of logged channels (Figure 2.7). User can here specify multiple parameters that affect the format of the data which are displayed in reports.

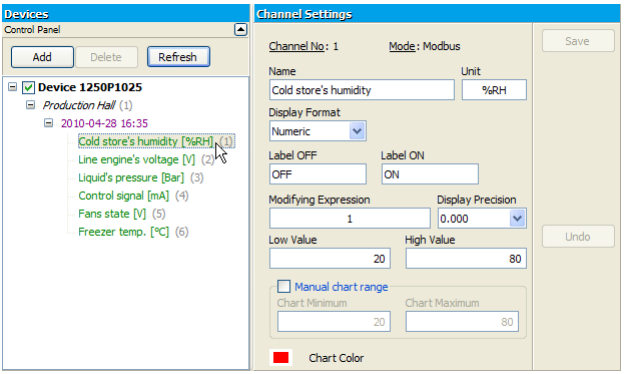


Figure 2.7. Channel parameters

2.4. PROGRAM SETTINGS

Access to the program settings can be reached by clicking on the **[Settings]** button in the **Side Menu**.

2.4.1. "Application" tab

Here are the general settings of the program. User can check here location of the data stored on your hard drive under ”Bases directory” position (Figure 2.8), and set the interface language.

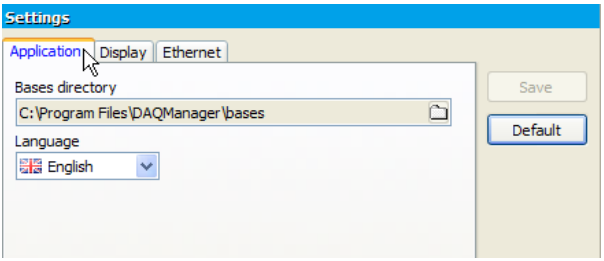


Figure 2.8. Program Settings – "Application" tab

2.4.2. "Display" tab

Settings located on this tab responsible for how to retrieve data from the archive and their

presentation (Figure 2.9). Due to the large amount of data, user can set here some limitations, which will shorten waiting time to generate the report and reduce requirement for RAM.

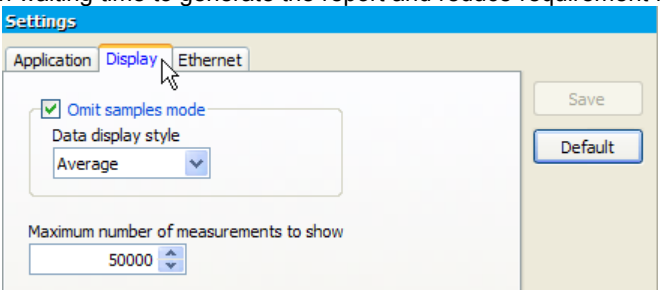


Figure 2.9. Program Settings – "Display" tab

2.5. VISUALIZATION OF DATA - REPORTS

Based on measurement data collected from devices, ***DAQ Manager*** can generate report as a table with all channels in current log or in the form of graph to facilitate data analysis.

2.5.1. Choice of time interval

By selecting desired log in the device list, the program sets internal time intervals, computing data volume and automatically selects last 5000 samples for displaying.

Time interval can be also defined manually by typing selected dates, or less accurate but faster, using the time line. Blue colour on the time line means there is no measurement data. Gray colour indicates that during this period there are some measurement data, but were not selected to generate a report. Orange colour means that the report will be generated just from this time interval. Orange range can be freely modified by using the mouse (Figure 2.10).

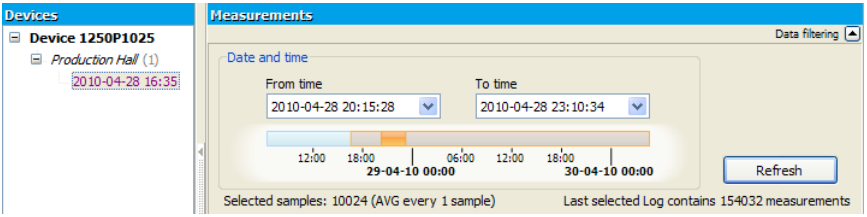
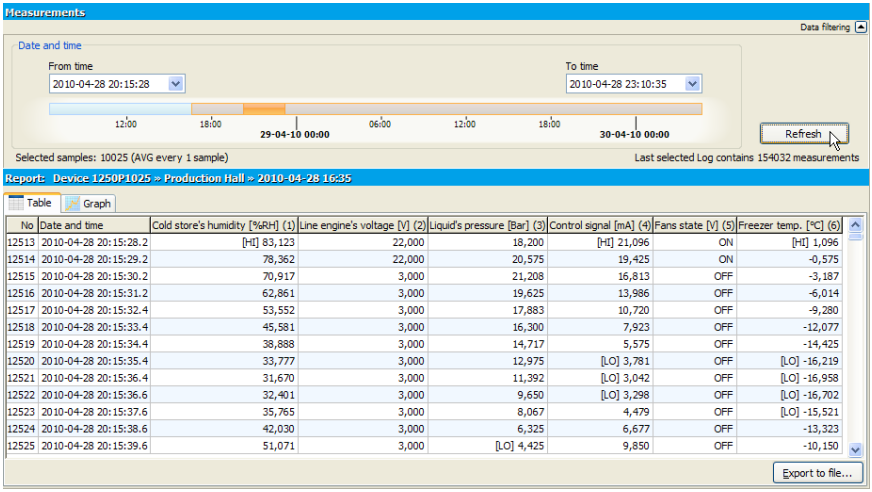


Figure 2.10. Choice of time interval

After selecting a date and time range, user can now generate reports in table and graph by clicking on the **[Refresh]** button or double-click on any log on the list of devices.

2.5.2. Table

Generated table of measurements consist of column with measure number counted from the beginning of the log, column with the sample time (time stamp) and columns with data of particular channels (Figure 2.11).



No	Date and time	Cold store's humidity [%RH] (1)	Line engine's voltage [V] (2)	Liquid's pressure [Bar] (3)	Control signal [mA] (4)	Fans state [V] (5)	Freezer temp. [°C] (6)
12513	2010-04-28 20:15:28.2	[HI] 83,123	22,000	18,200	[HI] 21,096	ON	[HI] 1,096
12514	2010-04-28 20:15:29.2	78,362	22,000	20,575	19,425	ON	-0,575
12515	2010-04-28 20:15:30.2	70,917	3,000	21,208	16,813	OFF	-3,187
12516	2010-04-28 20:15:31.2	62,861	3,000	19,625	13,986	OFF	-6,014
12517	2010-04-28 20:15:32.4	53,552	3,000	17,883	10,720	OFF	-9,280
12518	2010-04-28 20:15:33.4	45,581	3,000	16,300	7,923	OFF	-12,077
12519	2010-04-28 20:15:34.4	38,888	3,000	14,717	5,575	OFF	-14,425
12520	2010-04-28 20:15:35.4	33,777	3,000	12,975	[LO] 3,781	OFF	[LO] -16,219
12521	2010-04-28 20:15:36.4	31,670	3,000	11,392	[LO] 3,042	OFF	[LO] -16,958
12522	2010-04-28 20:15:36.6	32,401	3,000	9,650	[LO] 3,298	OFF	[LO] -16,702
12523	2010-04-28 20:15:37.6	35,765	3,000	8,067	4,479	OFF	[LO] -15,521
12524	2010-04-28 20:15:38.6	42,030	3,000	6,325	6,677	OFF	-13,323
12525	2010-04-28 20:15:39.6	51,071	3,000	[LO] 4,425	9,850	OFF	-10,150

Figure 2.11. Create a report as a table

If the value in the channel exceeds "Low Value" or "High Value" specified in the parameters of selected channel (Figure 2.7), then in the table appears [LO] or [HI] beside the value. However, if the channel has set parameter "Display Format" as "Binary", then instead of real value, label is displayed (defined by "Label ON / OFF" parameters), where "Label ON" is accepted for values greater than 0.

By pressing the **[Export to file ...]** button You can save the table as a CSV file which can then be opened with any spreadsheet.

2.5.3. Graph

Along with the table, there is created the graph with all logged channels (Figure 2.12).

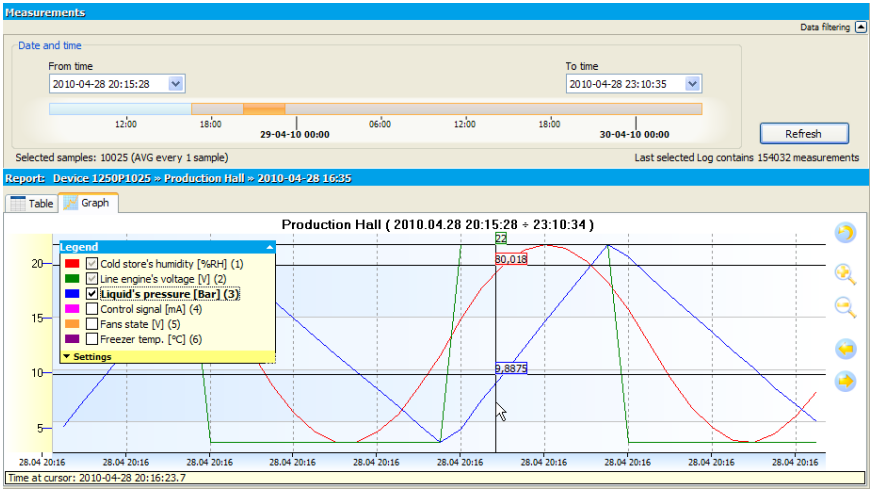


Figure 2.12. Create a report as a graph

Scaling the graph

The scale of the graph can be changed by clicking on the X or Y axis and dragging it by mouse horizontally or vertically. In addition, the scale of the X-axis can also be changed by pressing **[Zoom In]** or **[Zoom Out]** buttons.

Moving the graph

The graph can be moved by clicking on the graph and dragging it by mouse horizontally or vertically. In addition, the graph can be moved horizontally by pressing **[Move Left]** or **[Move Right]** buttons.

Visibility of the channel

If You wish, some channels can be hidden by deselecting them on the chart legend.

2.5.4. Print the graph

Graph view specified by user can print by using **[Print Graph ...]** button (Figure 2.13).

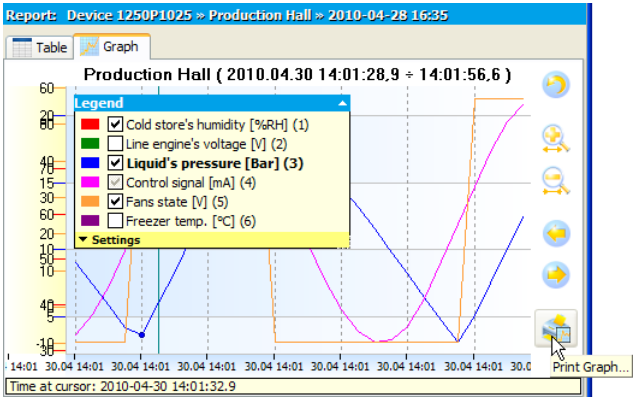


Figure 2.13. Printing graphs - individual scales for channels

On the print, there will be visible only scales of the Y-axis selected by the user and this is consistent with the current view.

If data of several channels have similar values, then before you print, may be helpful to change method of the Y-axis scaling in such a way that the scale will be common to all channels. This can be done by selecting the *"Common scale for all channels"* in the selected log, accessible from the side menu **[Devices]** (Figure 2.14)

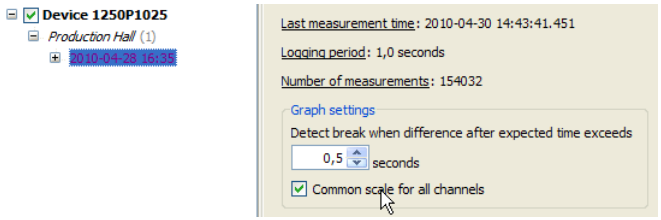


Figure 2.14. Inclusion of a common scale for all channels

When you select this option, the scale of the Y-axis will be common for the checked channels (Figure 2.15).

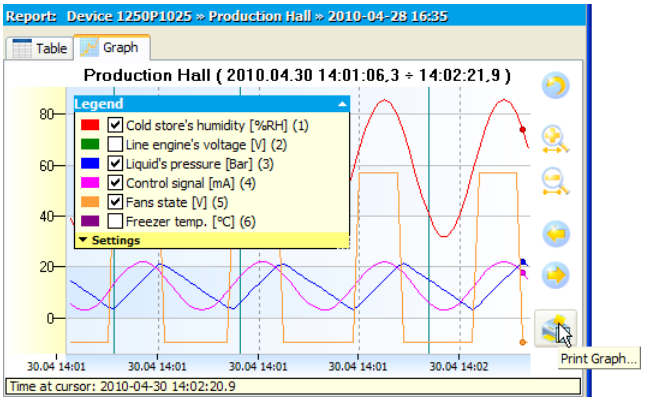


Figure 2.15. Printing graphs - common scale for channels