

mLog Server - [Events log]

Program About...

Events: ERRORS WARNINGS Database: Connected to: C:\Metronic\AMP\InLog Server\InLog.FDB

Date & Time	Status	Source	Description
2019-02-15 13:09:05	INF	ModbusTCP:192.168.2.15:502	Start communication on Modbus TCP.
2019-02-15 13:09:05	ERR	ModbusTCP:192.168.2.15:502	Connection with IP Address has broken.
2019-02-15 13:09:45	ERR	ModbusTCP:192.168.2.15:502	Connection with IP Address has broken.
2019-02-15 13:09:45	ERR	ModbusTCP:192.168.2.15:502	Exceeded Response Timeout.
2019-02-15 13:09:25	INF	ModbusTCP:192.168.2.15:502	Start communication on Modbus TCP.
2019-02-15 13:08:25	INF	ModbusTCP:192.168.2.14:502	Start communication on Modbus TCP.
2019-02-15 13:08:25	INF	ModbusTCP:192.168.2.12:502	Start communication on Modbus TCP.
2019-02-15 13:08:20	INF	ModbusTCP:192.168.2.14:502	Stop communication on Modbus TCP.
2019-02-15 13:08:00	INF	ModbusTCP:192.168.2.12:502	Stop communication on Modbus TCP.
2019-02-15 13:07:59	INF	ModbusTCP:192.168.2.15:502	Start communication on Modbus TCP.
2019-02-15 13:07:50	INF	ModbusTCP:192.168.2.15:502	Start communication on Modbus TCP.
2019-02-15 13:07:50	INF	ModbusTCP:192.168.2.14:502	Start communication on Modbus TCP.
2019-02-15 13:07:50	INF	ModbusTCP:192.168.2.12:502	Start communication on Modbus TCP.

# mLog

## USER MANUAL

Version: 190221EN



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**Information from the Manufacturer**

**Before using the software, carefully read User Manual.**

**The manufacturer reserves the right to making changes (without lowering operational parameters) due to continuous modernization of the software.**

## 1 GENERAL DESCRIPTION

The mLog is a software, which enables on-line process data presentation from one or more measuring devices or transducers equipped with ports:

- RS485 (with Modbus RTU protocol),
- Ethernet (with Modbus TCP protocol).

Data are archived in the database, from where they can be read and visualized in the form of charts and tables, as well as printed and exported to the selected file format. The current results are displayed and visualized in the form of tables, single values, charts and bar graphs.

The mLog software consists of three modules:

- **mLog Server:** reading data from devices and transducers in Modbus RTU/TCP protocol, data recording into the database, information about the status of communication.
- **mLog Client:** on-line visualization of process values.
- **mLog View:** reading archived data from the database (from the date to the date), visualization, export the table to the \*.csv format, export the chart to the \*.bmp, \*.jpg, \*.pdf or \*.html format.

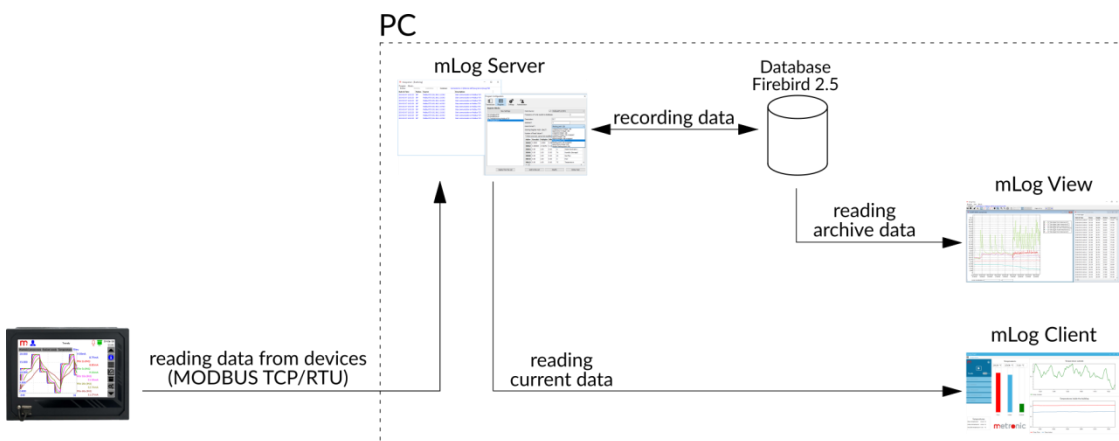


Figure 1.1 Scheme of the mLog software operation

The software can be configured in the basic application (mLog Server, mLog Client and mLog View operating on the same computer) or in an extended application – [distributed system](#) (mLog Server is operating on a different computer than mLog Client and mLog View).

There are 4 language versions available: English, French, Spanish and Polish.

### 1.1 System requirements

System requirements necessary for the proper operation of the software:

- Operating system: Windows 8 or later
- Processor: min. 1 GHz
- RAM: min. 2 GB
- Hard disk: 80 MB of free disc space or more\*

\*Does not include space needed for database file. When using the program, depending on the intensity and number of results read, the need for free disc space may increase in connection with increasing size of the database file.

## 2 SOFTWARE INSTALLATION AND REGISTRATION

### 2.1 Software installation

The *mLog install v3.0.0.0.exe* file is used to install the mLog software (3.0.0.0 specifies the version number of the program). During installation, follow the installation wizard. Typical installation does not require any changes to the installation settings (if Firebird 2.5 is installed on the computer, there is no need to reinstall it).

By default, the software is installed in the folder:  
*C:\Metronic AKP*

After installing the program, four folders will be created in the main *Metronic AKP* folder: [mLog Client](#), [mLog DB Update](#), [mLog Server](#) and [mLog View](#) (more information in the relevant sections).

**!** If the software is to work in a distributed system, only the mLog Client or mLog View programs should be installed on the client computers (selection in the installation wizard).

#### 2.1.1 Software update

If the previous version of the software was installed on the computer, it is recommended to make a copy of the database and then uninstall the previous version of the program. The database can be updated to the new version as described in section 7.

#### 2.1.2 Uninstall and delete software

Use the **Add or remove programs** function to uninstall the mLog software and Firebird.

**!** The database is not automatically deleted during uninstalling the program.

It is necessary to manually delete the database and settings files from the folder in which the software was installed.

### 2.2 Software registration

The mLog software should be registered in the mLog Server program according to the license code obtained after purchase. The following programs will be activated:

- *mLog Server*: one user,
- *mLog Client*: unlimited number of users,
- *mLog View*: unlimited number of users.

Limitations in the unregistered mLog Server program:

- program displays messages about required registration (welcome screen, top bar of the window and additional status bar with countdown clock at the bottom of the window);
- working time is limited to 10 minutes (countdown clock in the bottom status bar);
- only current reads can be set and executed, data is not recorded in the database;
- program will turn off after 10 minutes, the settings will not be saved.

The mLog Server program requires administrator permissions. Choose from the toolbar:

*Program* → *Configuration...*

Log in with the default password: **admin**.

The License Code is automatically generated in the *Administration* tab. Press the **Register Program (by e-mail)** button and fill in the fields in the automatically generated message: Program Code (entered automatically), Serial Number (provided on the software Registration Card) and address data of the program owner or user. The message should be sent to an automatically entered address. Activation code will be sent by an email message.

After receiving the activation code, enter it in the *Administration* tab into the field Activation Code and select the **Confirm Activation Code** button.

Detailed information is available in the Software Registration Card, provided at purchase.

After registering the software, the full functionality of mLog Server will be activated.

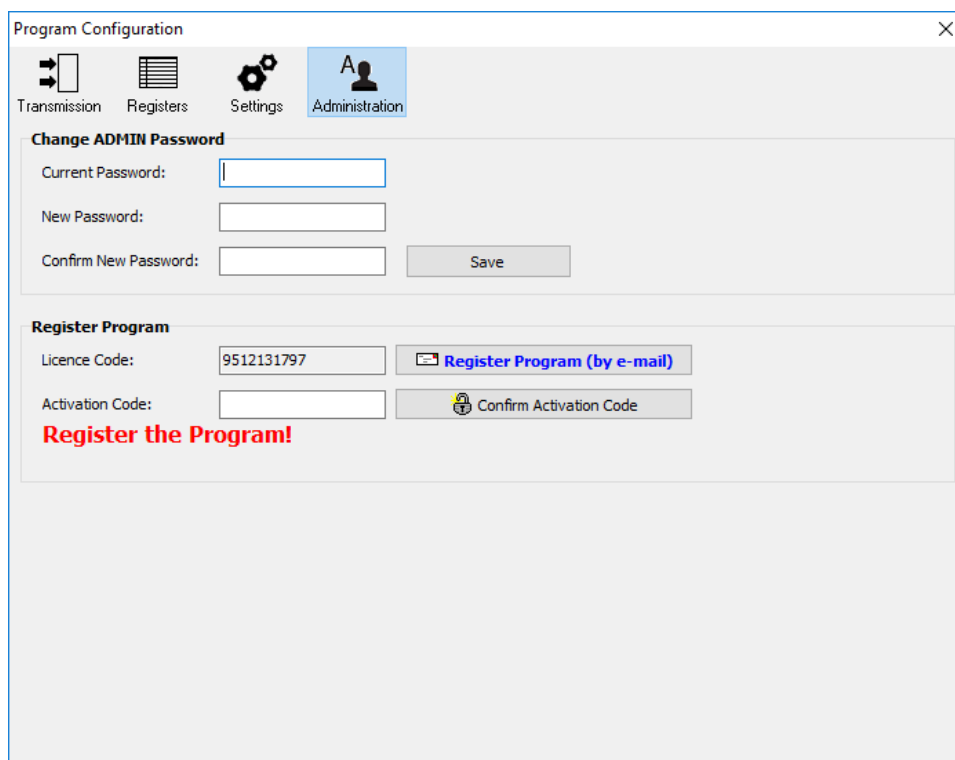


Figure 2.1 Registering the mLog software in the mLog Server program

### 3 DISTRIBUTED SYSTEM

The information in this section is important when mLog Server is operating on a different computer than mLog Client and mLog View (software operating on a few computers).

Network configuration should be performed by users with knowledge and skills related to configuration and operation of computer networks.

#### 3.1 Requirements for server settings (mLog Server)

The following requirements apply to the server computer (the computer on which the mLog Server program is operating) and must be introduced before client computers (computers on which mLog Client or mLog View programs are operating) can connect to the database.

- Default settings as for installation of Firebird and mLog Server program (described in the section 2.1).
- Fixed IP address of the server computer.  
Client computers (mLog Client or mLog View programs) must know the IP address of the server computer (mLog Server program). It should be fixed, otherwise connection to server may not be possible. The IP Address should be set as static or the DHCP server should be configured so as to always assign the same IP address to the Firebird server computer. The IP Address of the server computer is entered in the access path to the mLog.FDB database file during the configuration of mLog View program or in the Settings tab during the configuration of mLog Client program.
- Unlocking 3050 and 8080 ports on the server computer (adding a rule in the firewall)  
The computer server port 8080 should be unlocked, because this port is used for communication between the mLog Server program and clients working on other computers (mLog Client program).  
Firebird server connects to network using TCP/IP protocol. To be able to work in a local network, the computer server port 3050 should be unlocked, because this port is used for communication between the Firebird server and clients working on other computers. In order to enable work via Internet, the Firebird server should be provided with an external IP address or 3050 port should be redirected on the router to the Firebird server computer.  
Information about unlocking ports can be found on Microsoft support website.

#### 3.2 Requirements for client settings (mLog View)

The following requirements apply to the client computer (the computer on which the mLog View program is operating) and must be introduced so as client computer can connect to the database.

During first launch of the mLog View program, the information about lack of connection to the database will be displayed. To configure the database access path, select *Program* → *Configuration...* and enter the correct path to the database file (mLog.FDB) on the server computer preceded by the IP address of the server computer. The path to the database should be in the following form:

```
<server_IP_Address>:<disc_letter>:\<catalog_1>\<catalog_2>\..\mLog.FDB
```

An example of the correct path:

`192.168.2.217:C:\Metronic AKP\mLog Server\mLog.FDB`

The path of the database file cannot contain special characters.

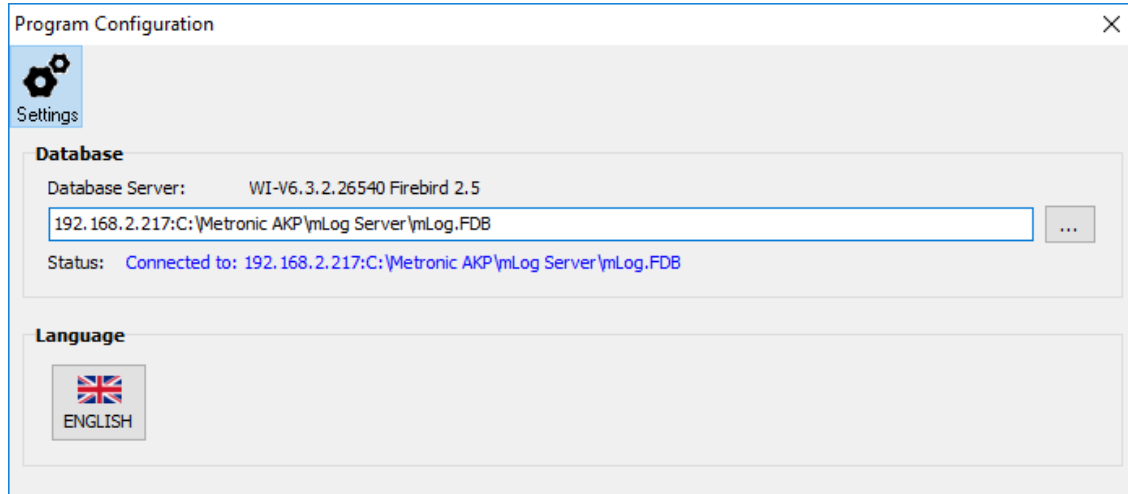


Figure 3.1 Configuration of the path to the database file in the mLog View program

### 3.3 Requirements for client settings (mLog Client)

The following requirements apply to the client computer (the computer on which the mLog Client program is operating) and must be introduced so as client computer can connect to the server computer (the computer on which the mLog Server program is operating).

To configure the access to current results, select the *Settings* button and enter the IP Address and Port of server computer. It is recommended to check if the communication is correctly configured using the *Test connections* button (the mLog Server program must be enabled). If the settings were configured correctly, the message 'Connection successful' will be displayed.

### 3.4 Possible issues with Firebird Server

- **InterBase – Unsupported on-disk structure for file xxx.fdb**  
Issues with client connection, in the event of both InterBase and Firebird installed on one server. InterBase uses port 3050, thus blocking Firebird – it is recommended to change the port used for remote access in Firebird server configuration, e.g. from 3050 to 3051.
- **Antivirus Software**  
In rare cases, antivirus software can block the work of the Firebird server. If the server is not working properly, (for safety reasons, make sure to physically disconnect your computer from the Internet first) turn the antivirus software off for a while and try installing Firebird again. If the server starts to work properly without the antivirus, add the fbserver.exe file to the list of exceptions in the antivirus program.



## 4 mLog Server

The mLog Server program requires administrator permissions.

### 4.1 Configuration

The mLog Server program requires configuration before use. Launch the configuration window by selecting *Program* → *Configuration...* Then log in as an Administrator, using the password (the default password: **admin**).

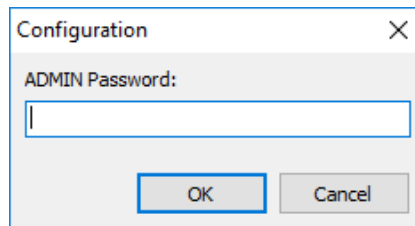


Figure 4.1 Login window

Configuration of the program is performed in four steps:

- *Transmission*: configuration of COM and Ethernet transmission parameters (section 4.1.1),
- *Registers*: selection of Modbus RTU/TCP registers for reading (section 4.1.2),
- *Settings*: path to the database, read frequency and language (section 4.1.3),
- *Administration*: program registration, password change (section 4.1.4).

Changing the location of the database file (path) will be saved after closing the program, changing the other settings will be confirmed after closing the configuration window.

To change the configuration, stop the transmission.

#### 4.1.1 Transmission

A list of COM ports (for Modbus RTU) as well as IP Addresses and Ports (for Modbus TCP) to which the application will refer must be created. Configure transmission parameters for Modbus RTU/Modbus TCP and readout frequency (individually for each set of parameters).

For the Modbus RTU protocol, specify:

- COM port of the computer (COM1, COM2, ..., COM99),
- Baud Rate (1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400),
- Parity (none + 1bit stop, none + 2 bit stop, even, odd),
- Additional Timeout – maximum time for response of the device to be questioned by means of the Modbus RTU protocol.

The Baud Rate and Parity parameters must be configured according to the settings in the devices from which the data will be read.

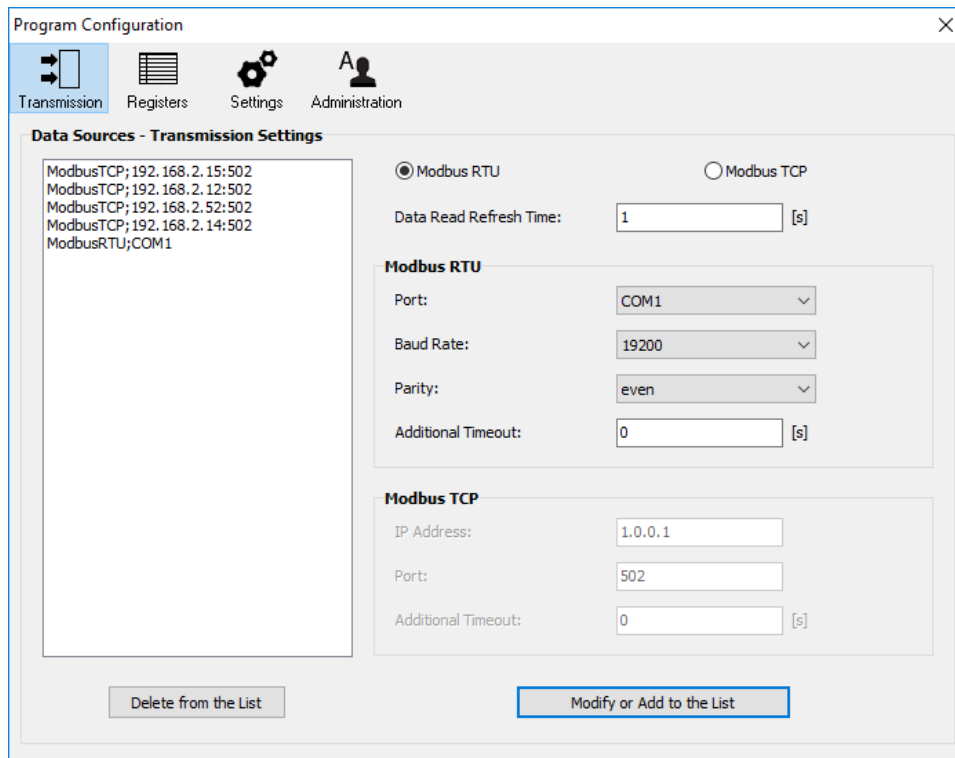


Figure 4.2 Configuration of COM ports (Modbus RTU)

For the Modbus TCP protocol, specify:

- IP Address of the device from which the data will be read,
- Port,
- Additional Timeout – maximum time for response of the device to be questioned by means of the Modbus TCP protocol.

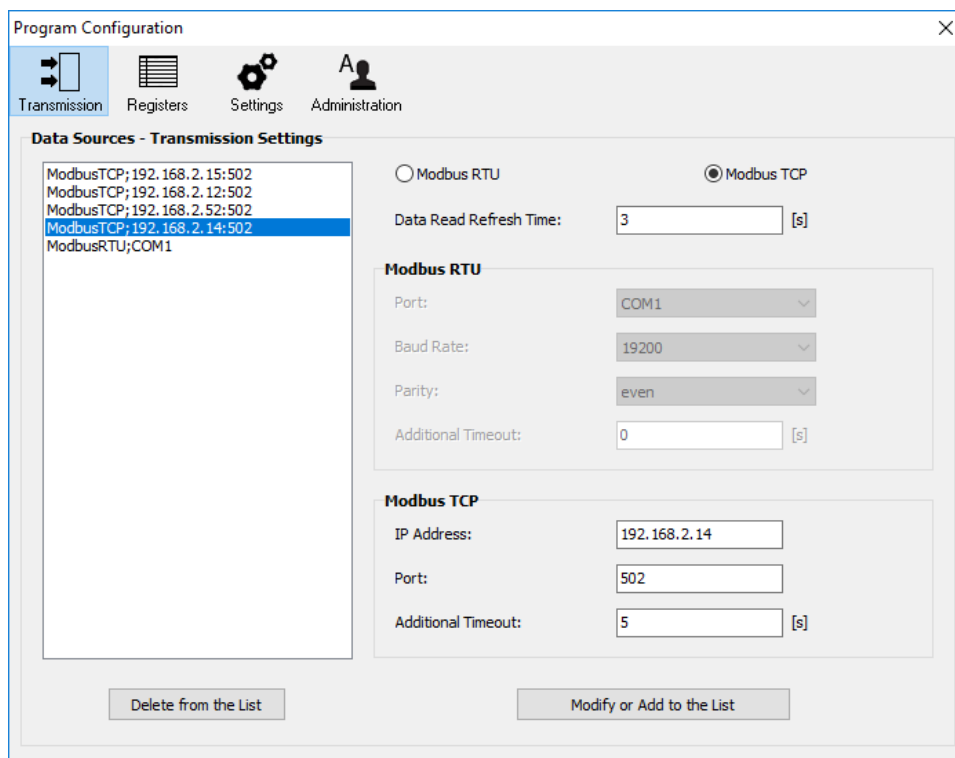
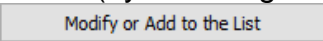
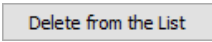


Figure 4.3 Configuration of IP Addresses and Ports (Modbus TCP)

To confirm selection press the  button.

The selected set of parameters can be modified (by selecting it from the list, changing selected parameters and confirming with the  button). Parameters: COM port, IP address and port are unique parameters, so changing these parameters will add a new position to the list (the position on the list will not be modified).

Incorrect or invalid positions can be removed by using the  button, however, positions used in the configuration of registers cannot be deleted.

### 4.1.2 Registers

Registers from which the data will be read should be configured. Selected registers are saved in a group (up to 20 registers in one group). In order to do this:

- select Data Source (list corresponds to the list of COM ports as well as IP addresses and ports created in the Transmission tab, details in section 4.1.1),
- select frequency of write results to database (1 – each record is saved, 2 – saved every second record, 10 – saved every tenth record e.t.c.),
- provide address of the device (parameter is relevant in the case of using RS485/RS232 ↔ Ethernet converter),
- specify the data format (unsigned short integer 16b, signed short integer 16b, unsigned integer 32b, unsigned integer 32b swapped, signed integer 32b, signed integer 32b swapped, floating point 32b, floating point 32b swapped, signed long integer 64b, double floating point 64b),
- specify the starting address from which to read data (prefix 3 indicates function 04 *Read Input Registers* and prefix 4 indicates function 03 *Read Holding Registers*),
- specify the number of results to read,
- the default description for given group of registers can be modified.

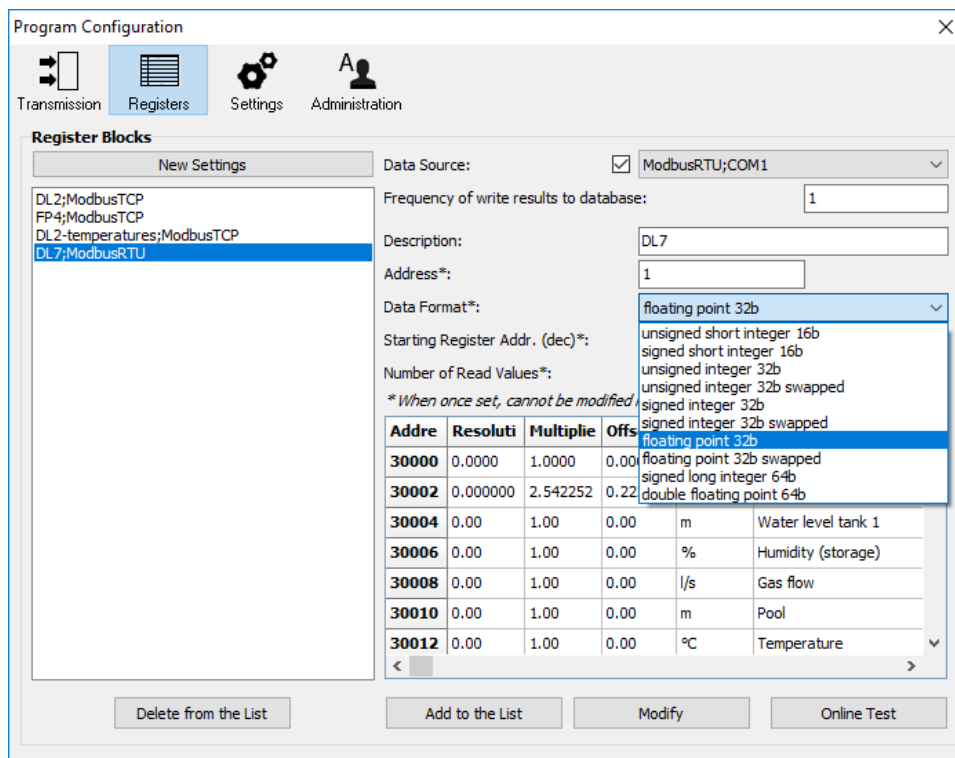


Figure 4.4 Configuration of registers from which data will be read

As the result of configuring parameters, subsequent results will appear in the table on the right, at the bottom of the window. An individual description can be added and different *Multiplier*, *Offset* and *Unit* can be entered for each result. Also each result can have a different *Resolution* set.

$$\text{Computed Value} = \text{Multiplier} * \text{Read Value} + \text{Offset}$$

The 'Register settings' dialog box shows the following configuration:

- Address: 30036
- Description: Temperature
- Unit: °C
- Resolution: 0.000
- Multiplier (A): 1.000
- Offset (B): 0.000

The formula  $y = A * x + B$  is displayed next to the Multiplier and Offset fields. At the bottom, there is a 'Copy settings from register' dropdown menu, and 'Set' and 'Cancel' buttons.

Figure 4.5 Register settings window

Before confirming the entered data, the correctness of reading for a given set of registers can be tested by selecting the **Online Test** button and in the open window by selecting the **Test** button.

The 'Test transmisji danych' dialog box shows the following data in its table:

Address	Description	Read Value	Computed Value
30000	Register 30000	15.81	15.81
30002	Register 30002	23.71	23.71
30004	Register 30004	31.61	31.61
30006	Register 30006	39.51	39.51
30008	Register 30008	47.42	47.42
30010	Register 30010	55.32	55.32
30012	Register 30012	63.22	63.22
30014	Register 30014	71.12	71.12

Additional details in the dialog box include: Test button, ModbusTCP;192.168.2.16:502, Date & Time: 2019-02-15 13:02:06, and a scrollable list of registers with a 'Test' button at the top.

Figure 4.6 Online test

If readings are correct, add the register group to the list with the **Add to the List** button.

The selected group of registers can be modified (select the appropriate item from the list, change the selected parameters and confirm the selection by selecting the **Modify** button). The Address of the device, Data Format, Starting Register Address and Number of Read Values are unique parameters, i.e. the change of these parameters will not modify the position existing on the list - change the description of the group of registers and add a new group.

Incorrect or invalid positions can be removed by using the **Delete from the List** button.

### 4.1.3 Settings

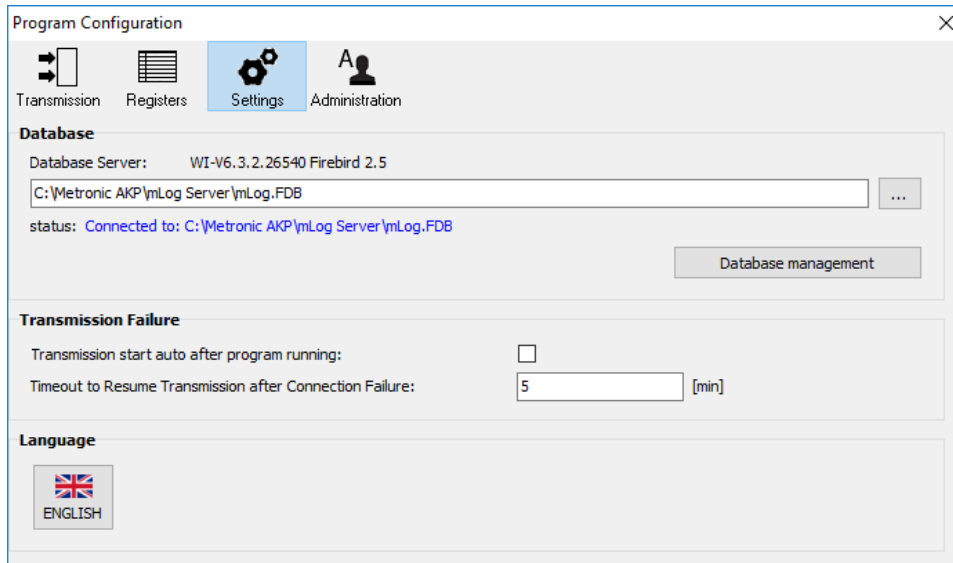


Figure 4.7 Settings window

In the *Settings* tab, the following items must be configured:

- path to the mLog.FDB database; if a standard installation of the program were performed and the location of the database file has not been changed later, then there is no need to change the default settings;
- time after which the program is to attempt to resume readings after they are interrupted;
- language (English, French, Spanish, Polish).

**! The change of the database file path will be saved after closing the program. The database file path cannot contain special characters.**

This tab also provides database management functions that enable:

- make a backup of database,
- remove the measurement data from the database (only values),
- remove all data from the database (values and settings).

After choosing the **Database management** button, the window will be displayed:

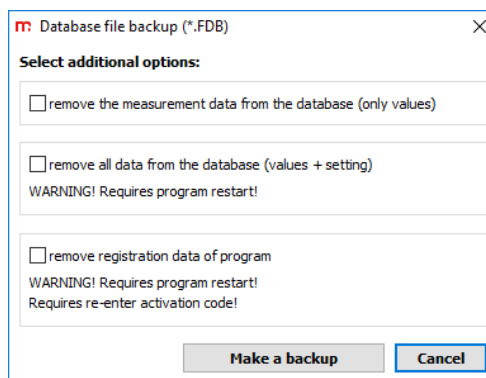


Figure 4.8 Database management function window

**! In order to protect the recorded data, it is recommended to back up the database at least once a month.**

### 4.1.4 Administration

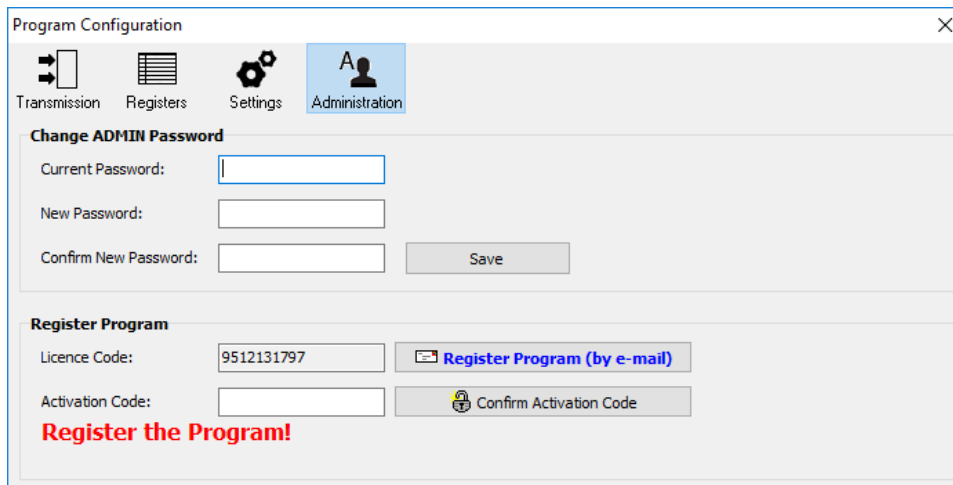


Figure 4.9 Administration window

In the *Administration* tab, it is possible to:

- change administrator password, the default password: **admin**,
- registration of the program, details in section 2.2.

### 4.2 Reading data from devices

To start reading data from devices, select: *Program* → *Start Transmission*.

After the start of data reading, a table informing about data transmission status is displayed:

- INF – information, e.g. start or end of readings by the user,
- WRN – warnings,
- ERR – errors, e.g. interrupting the connection, timeout exceeded.

All data transmission events are saved in the file *Events Log.txt* in the same folder where mLog Server program is located (the program displays the last 100 events).

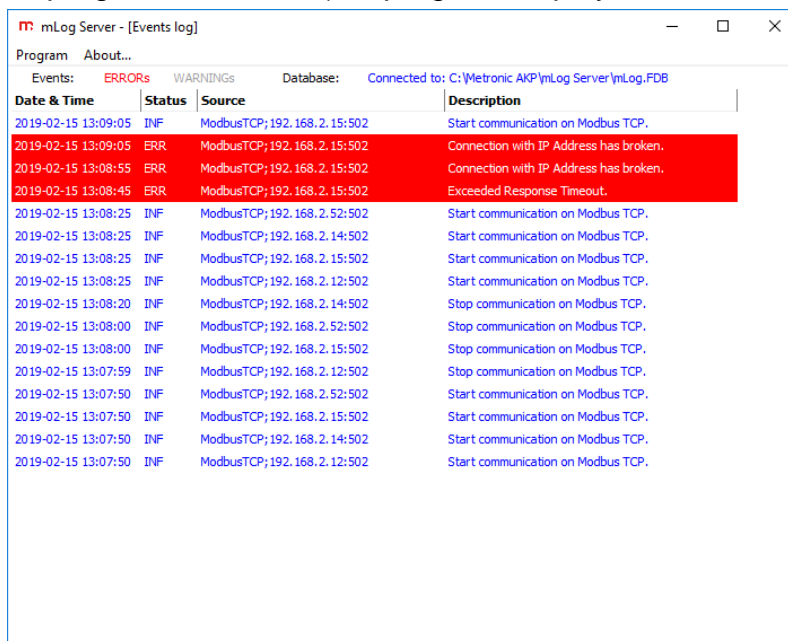


Figure 4.10 mLog Server – information about data transmission status

To stop reading data from devices, select: *Program* → *Stop Transmission*.

## 5 mLog Client

**!** It is necessary to configure and run the readout of registers in the mLog Server program. To display the current results, the data readout in mLog Server must be enabled (use the *Start Transmission* function).

### 5.1 Basic information

The current results are visualized using controls: Single value, Table, Graph and Bar graph. Controls are added on the boards. The ability to add any number of controls and boards, allows to configure customized display system. Additional elements on the board are user graphics and text fields. Elements on the board can be added in any order, it is possible to change their position and overlap of added elements.

Switching between boards is done using the tab bar. The menu bar is displayed after pressing the icon (hidden by default).

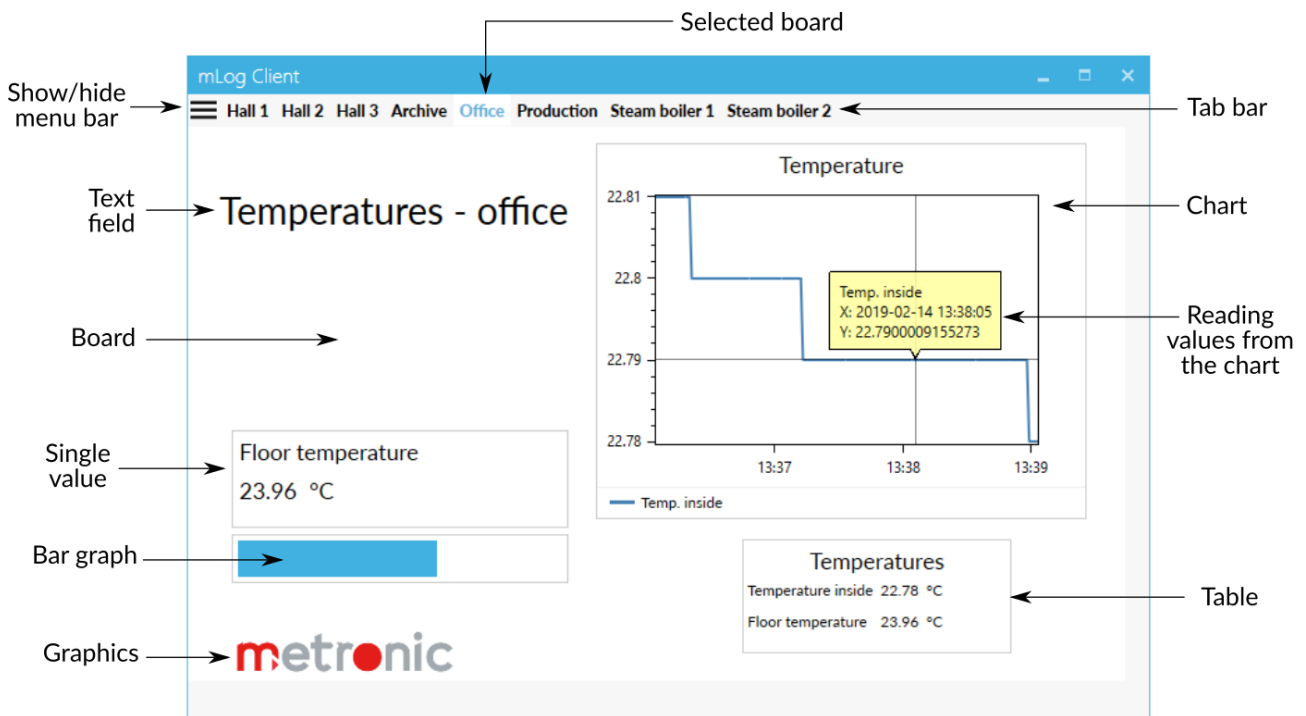


Figure 5.1 Organization of the application screen, bright color display mode (on-line data transmission enabled)

The program enables two display modes: light (bright background, dark captions) and dark (dark background, bright captions).

#### 5.1.1 First launch of the program

While the application is run for the first time, the only visible icon is . After pressing the icon, a [menu bar](#) will appear which enables [logging in](#) and then [configuration of the program](#).

### 5.1.2 Menu bar

To show the menu bar, press the ☰ icon (to hide the menu bar press the ⏪ icon or press the ☰ icon again).

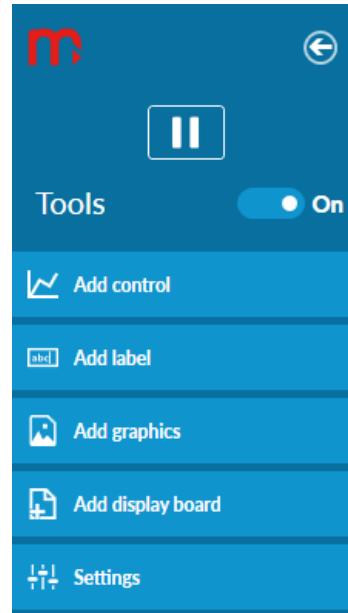




Figure 5.2 Menu bar

#### Start and stop on-line data transmission

With using the menu bar it is possible to start or stop reading of current results:  on-line data transmission is off,  on-line data transmission is on. If the on-line data transmission is on, the settings cannot be edited.

#### Tools (Edit settings)

Only logged in user can edit settings (the default password: **admin**, detailed information in section [Login](#)). To edit settings, set the Tools toolbar in the ON position.

Available buttons:

- *Add control\** – add and configure the control: Single value, Table, Graph and Bar graph.
- *Add label\** – add and configure a text field.
- *Add graphics\** – add own selected graphics.
- *Add display board* – add and configure the board. The number of added boards is unlimited. The added board is displayed in the tab bar (at the top of the window). The tab bar enables switching between boards (if it is larger than the size of the board, the display of invisible names of the board is possible using ◀ and ▶ buttons).
- *Settings* – change the language, configure the connection with the server, change the dimensions of the boards, change the display mode, change the password. It is necessary to configure the settings before adding the boards and controls.

\* – The button is active if at least one board has been added.

[Detailed description of the program configuration and about adding elements in section 5.2.](#)





### 5.1.3 Access control, login, logout and password change

In order to limit the possibility of changing settings by unauthorized users or operators, two levels of access are provided:

- *No logged in user* – standard program mode, which enables reading data, viewing boards and starting/stopping on-line data transmission. The level does not enable configuration of the program settings.
- *Logged in user* – level enables reading data, viewing boards, starting/stopping on-line data transmission and settings edition.

#### Login and logout

Login is possible only if the on-line data transmission has been stopped (). Set the Tools toolbar in the ON position, enter the password and confirm by pressing the **Log in** button. At the first login, it is necessary to use the default password: **admin**. After the first login, it is recommended to change the password.


Logout is possible only if the on-line data transmission has been stopped (). Set the Tools toolbar in the OFF position. After closing the program, the user will be logged out automatically. Turning the on-line data transmission on/off does not automatically log out the user.

#### Change the password

To change the password, select the **Settings** button on the menu bar. In the settings window, select the **Change password** button, enter the new password twice and confirm the selection by pressing **Ok**. If the entered password is forgotten, please contact the Metronic AKP Service.

### 5.1.4 Change the language

Only logged in user can change the language. Select the **Settings** button on the menu bar and select one of the four available languages from the drop-down list in the **Language** field: English, Español, Français, Polski.

By default, the program is run in English (to change the language select:  → Tools ON → Settings → Language).

## 5.2 Program configuration

Any changes to the settings will be confirmed and saved after closing the program. Recommended order of program configuration:

1. **Settings:** Change the language → Define the IP Address and Port → Full-screen mode (on/off) → Change the display board → Change the color display mode (Theme) → Change the password
2. **Add display board**
3. **Add graphics/Add label/Add control**

Graphics, text fields and controls can be added only if at least one board is added. The selection of read registers is possible only when the connection (*Connection*) in the **Settings** window has been correctly configured.

### 5.2.1 Settings

The window enables configuration settings which are necessary for the correct operation of the program.

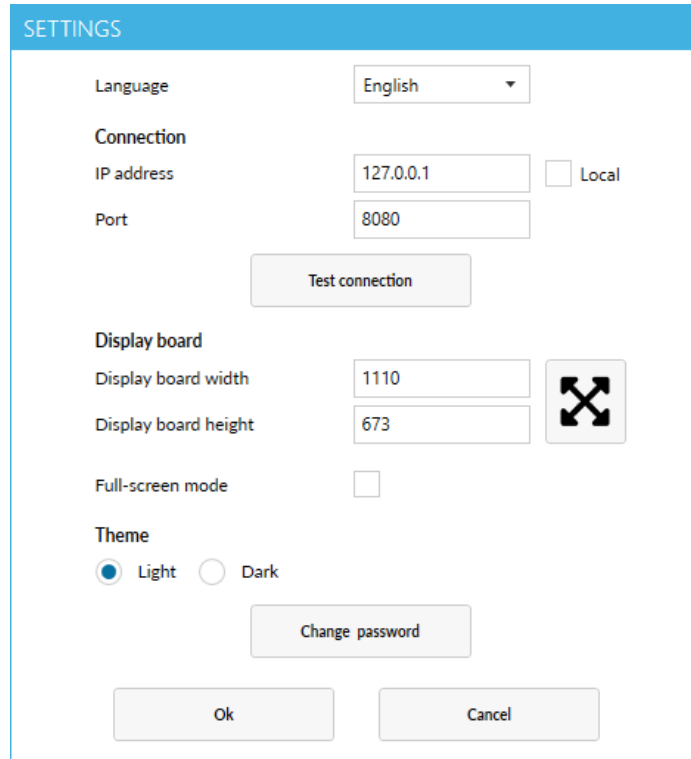



Figure 5.3 The settings window

- *Language* – choice from the drop down list, more information in section [Change the language](#),
- *Connection* – IP address and Port should be set in accordance with the settings of the computer on which mLog Server is operating. If the mLog Client and the mLog Server are operating on the same computer, select the *Local* option ( Local). It is recommended to check the correctness of the communication using the *Test Connection* button. If the settings are correct, the message 'Connection successful' will be displayed. Confirm it by pressing the OK button,
- *Display board* – the size of the board can be larger than the size of the application window. The size of all boards is the same. Dimensions are given in pixels and can be entered by the user or selected automatically using the  button that matches the size of the board to the current dimensions of the application window. It is recommended to set the dimensions of the boards before adding elements. Increasing the size of the boards after adding controls, text fields or graphics does not move the added elements. Decreasing the size of the board may result in moving the added elements,
- *Full-screen mode* – the program can be opened in standard mode () or in full-screen mode (). In full-screen mode there is no possibility of minimize and maximize the application window,
- *Theme* – available colors display mode settings: *Light* (bright background, dark captions) and *Dark* (dark background, bright captions),
- *Change password* – description of changing the password in the section [Change the password](#).

### 5.2.2 Add display board

Only the name of the board can be entered in the window. The dimensions of the board are configured in the [Settings](#) window.

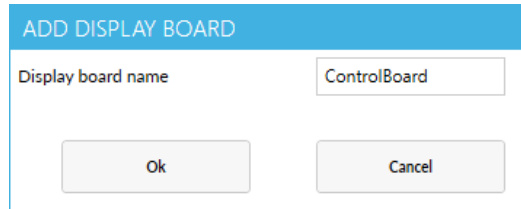


Figure 5.4 Add display board window

Enter the name of the board and confirm by pressing Ok. If at least one board is added, *Add graphics*, *Add label* and *Add control* buttons are unlocked. The added board is displayed in the upper part of the window, in the tab bar, which enables switching between boards. Press the right mouse button on the name of the board to display the selection list:

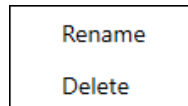


Figure 5.5 Editing the added board

- *Rename* – editing the name of the board,
- *Delete* – selecting the option removes the board and all elements added on it.

### 5.2.3 Add label

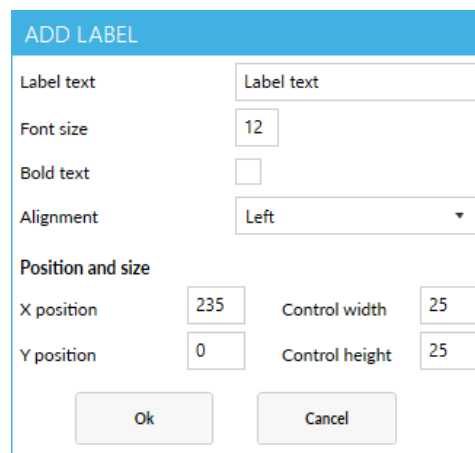




Figure 5.6 Add label window

- *Label text* – possibility of entering any text,
- *Font size* – font size must be an integer from 1 to 200, when choosing a font size, take into account the size of the board,
- *Bold text* – text display style: standard () or bold (),
- *Alignment* – selection of alignment to the left, to the right or to the center of the text field
- *Position* – change the position of the text field: the values given in pixels refer to the position of the upper left corner of the text field; the point (0,0) is located in the upper left corner of the board; the entire text field must be visible on the board,
- *Size* – change the dimensions of the text field: the values are given in pixels, the size of the text field cannot be larger than the size of the board.

After pressing Ok, the added text field will be displayed along with a border and the  symbol in the lower right corner of the text field (pressing enables changing the size). The  symbol and border are visible only when the on-line data transmission is off. To open the edit window, double-click on the text field or press the right mouse button on the text field and select the *Edit control* option.

### 5.2.4 Add graphics

The program enables adding own graphics in a \*.bmp, \*.jpg, \*.jpeg, \*.jpe, \*.jfif and \*.png format. Graphics can be an addition to the board or its background (see section [Edit the position of elements on the board](#)).

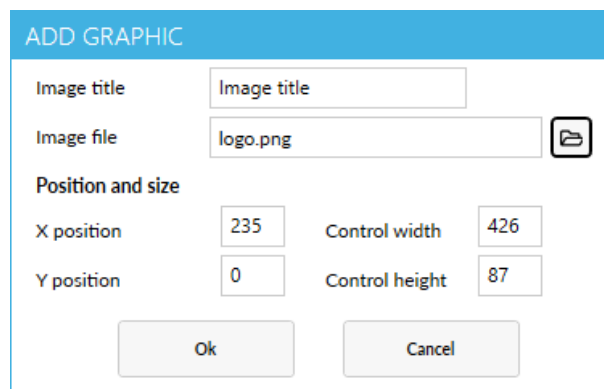





Figure 5.7 Add graphic window

- *Image title* – the name should facilitate the identification of graphics (the name is not displayed),
- *Image file* – press the  icon and choose the file location. After selection, the name and format of the selected file will be displayed in the *Image file* field,
- *Position* – change the position of the graphics: the values given in pixels refer to the position of the upper left corner of the graphics; the point (0,0) is located in the upper left corner of the board; the entire graphics must be visible on the board,
- *Size* – change the dimensions of the graphics: the values are given in pixels, the size of the graphics cannot be larger than the size of the board.

After pressing Ok, the added graphics will be displayed along with a border and the  symbol in the lower right corner of the graphics (pressing enables changing the size). The  symbol and border are visible only when the on-line data transmission is off. To open the edit window, double-click on the graphics or press the right mouse button on the graphics and select the *Edit control* option. The added graphic will be copied to the *Graphic* folder located in the folder containing mLog Client program.

### 5.2.5 Add control

The results are displayed using the controls: Single value, Table, Graph and Bar graph. Controls can be added in any order, it is possible to change their position and overlap of added elements (more in section [Edit the position of elements on the board](#)). The number of added controls on the board is unlimited, but a reasonable selection of the number of presented values to the size of the board is recommended.

After adding the control (Ok) it is not possible to change the type of control in the edit window, but it is possible to change all other settings.

The window for adding and editing the control is divided into two parts: on the left side there are settings identical for all types of controls, on the right side there are settings for the selected type of control.

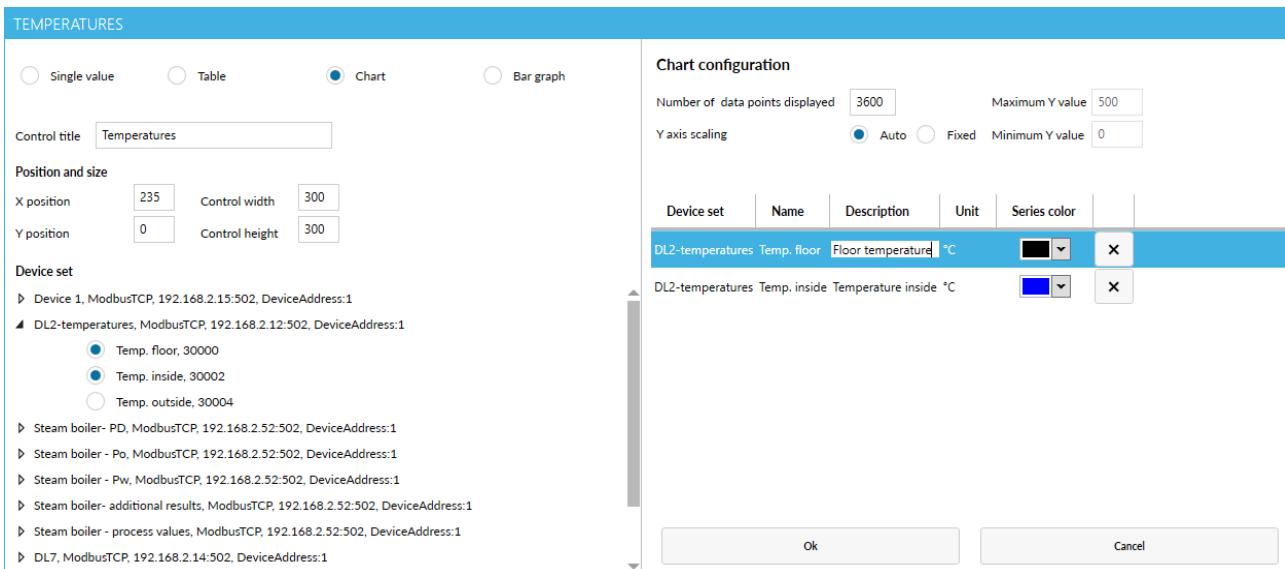


Figure 5.8 Add control window (adding a chart)

- **Type of control** - select the type of displaying read values: Single value, Table, Graph, Bar graph; after adding the control it is not possible to change its type,
- **Control title** – the title should facilitate the identification of the control; the default description is copied from the name of the first selected register (defined in mLog Server program),
- **Position** – change the position of the control: the values given in pixels refer to the position of the upper left corner of the control; the point (0,0) is located in the upper left corner of the board; the entire control must be visible on the board,
- **Size** – change the dimensions of the control: the values are given in pixels, the size of the control cannot be larger than the size of the board,
- **Device set** – list with register groups configured in the mLog Server program. Register groups are displayed in the form of a collapsed list by default, according to the settings in the mLog Server. Organization of the items description on the list: *The name of the group, ModbusTCP, IP Address:Port, Device ID address* or *The name of the group, ModbusRTU, COM Port, Device ID address* (depending on the reading mode).

**Note:** If this field is empty and the registers have been configured correctly, check the connection: *Settings* → *Test connection*

To select registers, expand the selected group. Organization of register names: *Description, Address* (according to the settings in the mLog Server program). The selected register is automatically added as a table row in the right part of the window. To delete the register, press its name again. After re-opening the edit window, the register group that contains the register/registers assigned to the control is expanded.

### Single Value configuration

- **Device set** – one register can be assigned to the control,
- **Control title visible** – the control title can be displayed () or hidden (),
- **Unit visible** – the read unit can be displayed () or hidden ().

### Table configuration

- *Device set* – any number of registers can be assigned to the control (also from different groups of registers),
- *Control title visible* – the control title can be displayed () or hidden (),
- *Unit visible* – the read unit can be displayed () or hidden ()

### Chart configuration

- *Device set* – any number of registers can be assigned to the control (also from different groups of registers),
- *Number of data points displayed* – entered number determines the number of points displayed in the chart window, max. 3600; the graph is refreshed every second,
- *Y axis scaling* – selection of Y axis scaling: *Auto* (the axis is adjusted to the smallest and largest value visible in the graph window) or *Fixed* (specify the maximum and minimum value of the Y axis). If the *Fixed* option is selected, the value above and below the entered level will not be displayed.

### Bar graph configuration

- *Device set* – one register can be assigned to the control,
- *Control title visible* – the control title can be displayed () or hidden (),
- *Vertical mode* – the bar graph is displayed in horizontal mode by default (), it is possible to display the bar graph in vertical mode (),
- *Range* – enter the maximum and minimum value based on which the current bar graph level will be displayed (if the entered maximum and minimum value is the same, the bar graph level will always be displayed as the maximum),
- *Alarms* – there is the possibility of: switching off alarms, switching on one alarm or switching on two alarms (switching on/off using the bar). If the alarm is on, enter: *Upper alarm threshold* – for a value higher than the entered bar graph color will change to the one selected from the list (green, yellow, red) or *Lower alarm threshold* – for a value lower than the entered bar graph color will change to the one selected from the list (green, yellow, red). In normal operating mode, the bar graph is blue.



### Table for identification and configuration of added registers

The added registers are displayed in the table on the right side of the edit window. To delete the selected register press the  icon. For each type of control information about the register is displayed: *Device set*, *Name*, *Unit* – these parameters cannot be changed.

For the Table/Chart control, the table specifies the display order in the table/legend control. The rows are arranged in the order of selecting registers from the list. To change the order, drag and drop register selected from the table.

For the Table/Chart control, the additional *Description* column defines the text displayed in the table/legend control. The default description is automatically copied from the *Name* column of the selected register. To change the description, press twice on the current name.


For the Chart control, an additional column enables changing the color of the trend line on the chart. To change color, press on the current color  (a list of colors will be displayed).

After pressing Ok, the added control will be displayed along with a border and the  symbol in the lower right corner of the graphics (pressing enables changing the size). The  symbol is visible only when the on-line data transmission is off. To open the edit window, double-click on the control or press the right mouse button on the control and select the *Edit control* option.

### 5.3 Edit the position of elements on the board

When the on-line data transmission is stopped, it is possible to edit every added element (controls, text fields and graphics) for the logged user.

To change the position of added element, drag and drop it. The area covered by the element is indicated by the border.

To change the size of added element, press the left mouse button on the  symbol (in the lower right corner of the border) or use the edit window.

The control/text field/graphics added earlier may be covered by elements added later (especially if the default position has not been changed). The order of overlapping controls/text fields/graphics can be changed using *Bring to front* and *Send to back* functions. Press the right mouse button on the selected control to display the selection list:

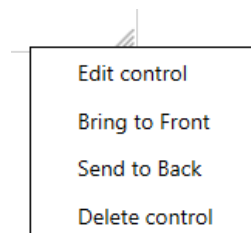



Figure 5.9 Selection list

- *Edit control* – open the edit window, which enables the user to configure the selected element; the edit window is also opened by double-clicking the left mouse button on the element,
- *Bring to Front* – the selected element will not be covered by any other element on the board,
- *Send to Back* – the selected element will be sent to back of all other elements on the board,
- *Delete control* – delete the selected element. In the displayed message, confirm operation. The action cannot be back, after deleting the element all settings configured in the edit window will be lost.

### 5.4 On-line data transmission

Turning on the on-line data transmission is possible on the menu bar: . Data on the Chart are refreshed every 1 second, data in other controls are refreshed according to read settings configured in mLog Server program. Read values are refreshed simultaneously on all boards.

The Table, Single value and Bar graph control displays the current value. The Chart control displays read values for the time interval resulting from the number of points set in the chart editing window.

The legend below the chart enables identification of the trend line. In addition, pressing the left mouse button on the trend line on the graph enables the exact reading of the value.

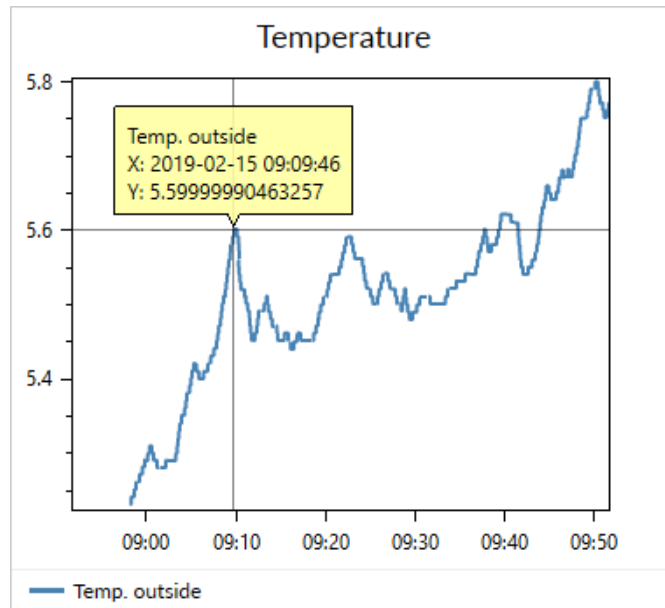


Figure 5.10 Reading values from the chart

After switching the on-line data transmission off and on, the chart window will be empty (read data will be lost), the other controls will display the last read value.

In Table and Single value controls, following symbols may be displayed:

- ----- – the value has not been read,
- NaN – the read value is Not a Number (wrong format of the value).

### 5.4.1 Communication errors

Communication errors occurring when the on-line data transmission is switched on are signaled by means of a red frame. Possible causes of communication errors:

- *Time Out* – if *Time Out* has occurred only on one device, all the controls to which at least one register read from this device was assigned, will be marked with a red frame. The trend line will be interrupted (if the Chart control contains only registers read from the device on which Time Out occurred, the read values will be overwritten and the chart control may be empty) on other controls (Single values, Tables and Bar graphs) the last read value will be displayed,
- *No communication with the server* – all controls will be marked with a red frame. Check out: whether mLog Server is enabled; whether transmission is on in the mLog Server program; Ethernet connection and make a connection test with the server (more information in section [Settings](#)).



## 6 mLog View

### 6.1 Configuration

The mLog View program requires configuration before use. Launch the configuration window by selecting *Program* → *Configuration...*

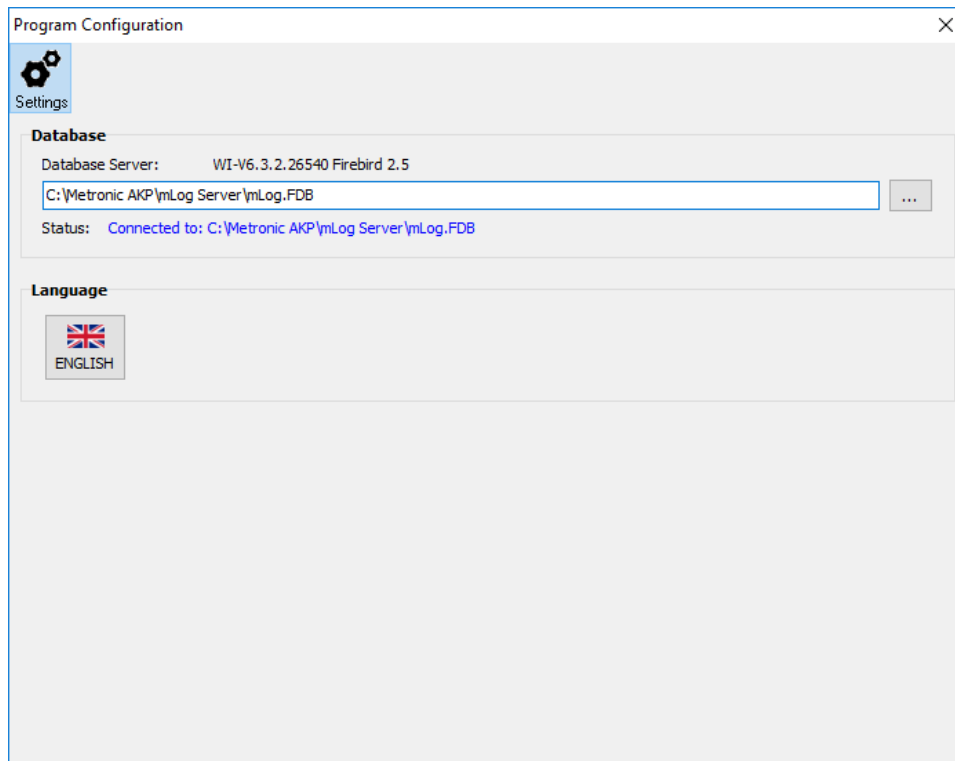


Figure 6.1 Configuration window of mLog View program





The settings of the mLog View program:


- *Database* – path to the database file, from which data will be downloaded. Additional information about configuration of mLog software in the case of operating in distributed system is included in section 3.2;
- *Language* – English, Spanish, French and Polish.

### 6.2 Visualization of archived data

To download data from the database, select *Program* → *Select data*.

From the list of registers, select the appropriate register group and transfer the relevant results to the *Selected registers* list using the buttons:

-  – transfer all results to the *Selected registers* list,
-  – transfer selected results to the *Selected registers* list,
-  – remove selected results from the *Selected registers* list,
-  – remove all results from the *Selected registers* list,

or by double-clicking the selected result. Then specify the period of time from which the results should be displayed and press the  button. This will start downloading data from the database.

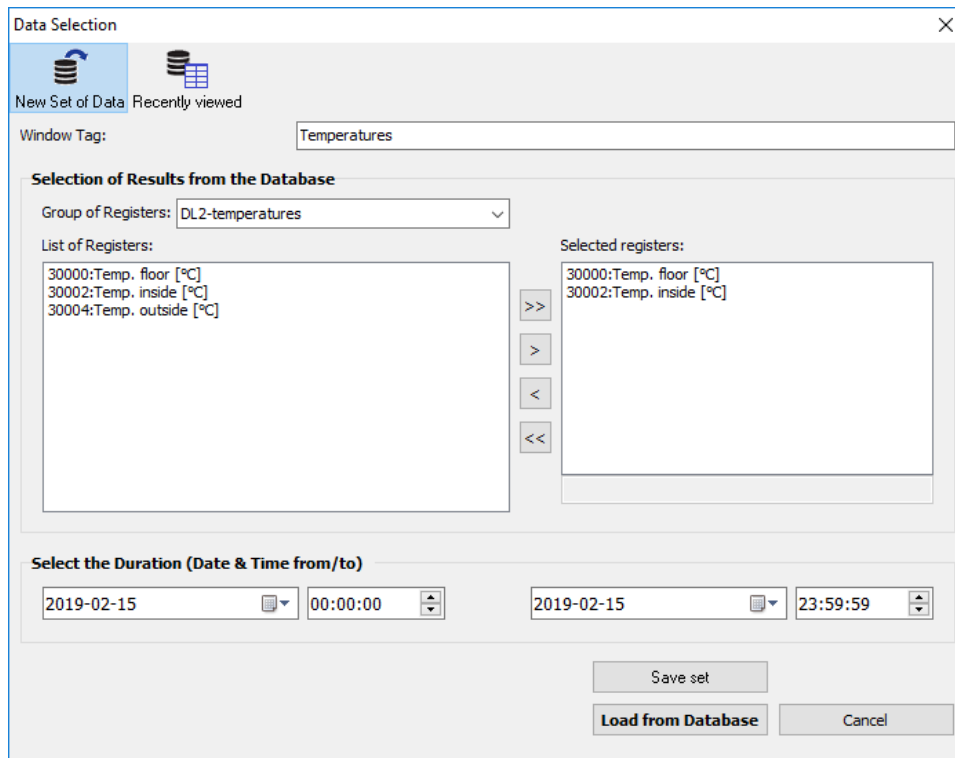



Figure 6.2 Downloading data - New Set of Data

The selected data set can be saved by clicking the  button. The saved data set can be selected in the *Recently viewed* tab from the *List of sets*:

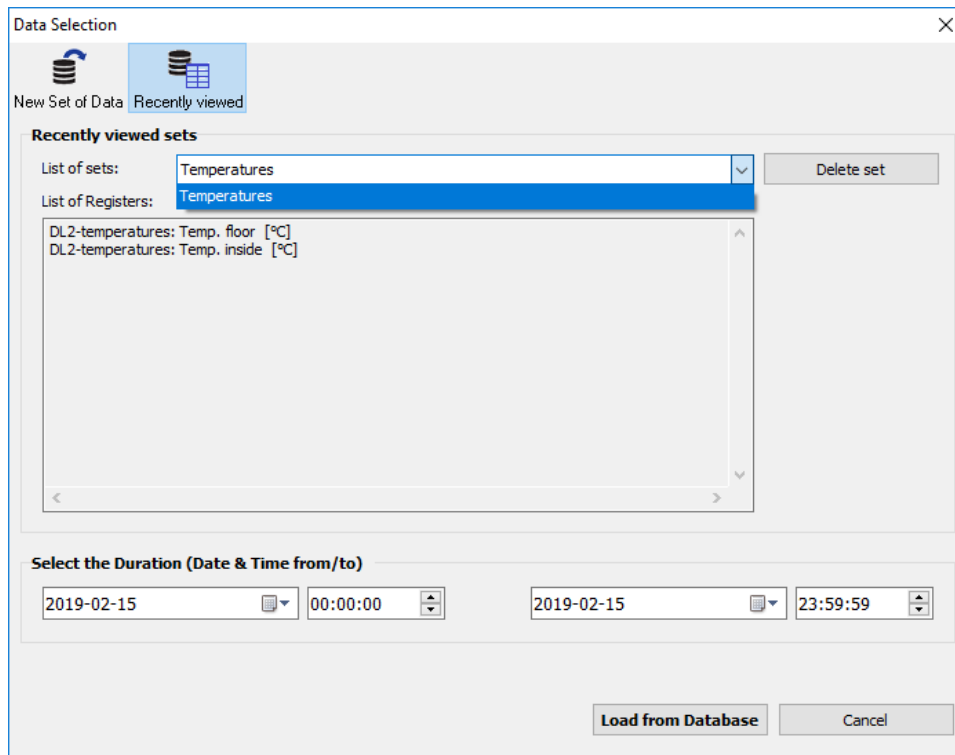
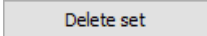


Figure 6.3 Data download - Recently viewed

To remove the data set select an item from the list and press the  button.

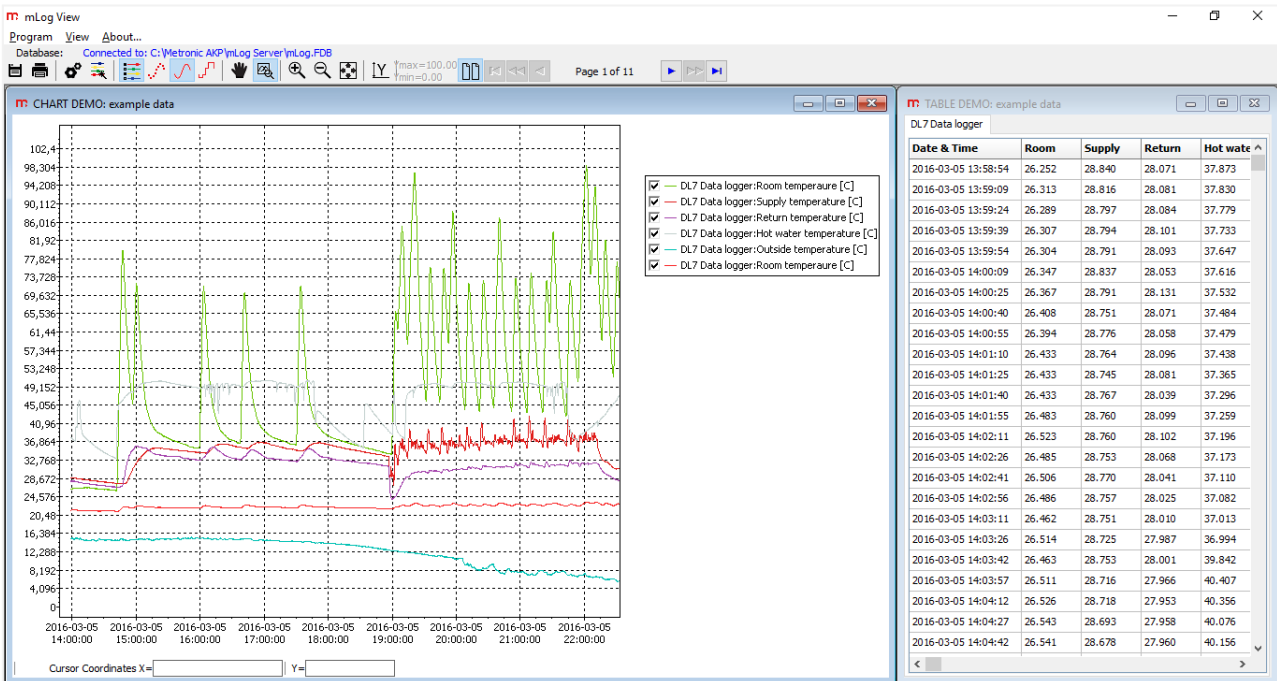


Figure 6.4 Visualization of archived data in the mLog View program

Individual windows with results can be freely arranged on the screen. The following functions may be helpful:

- View → Cascade,
- View → Tile Horizontal,
- View → Tile Vertical,
- View → Zoom Active,
- View → Minimize All.

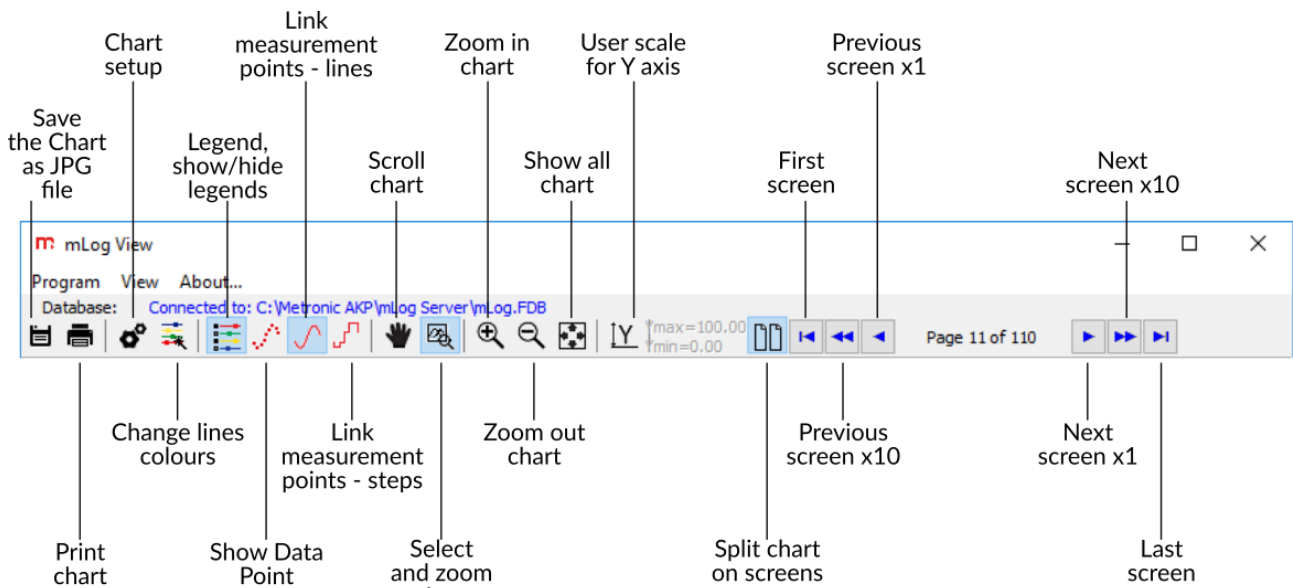


Figure 6.5 The toolbar in the chart window

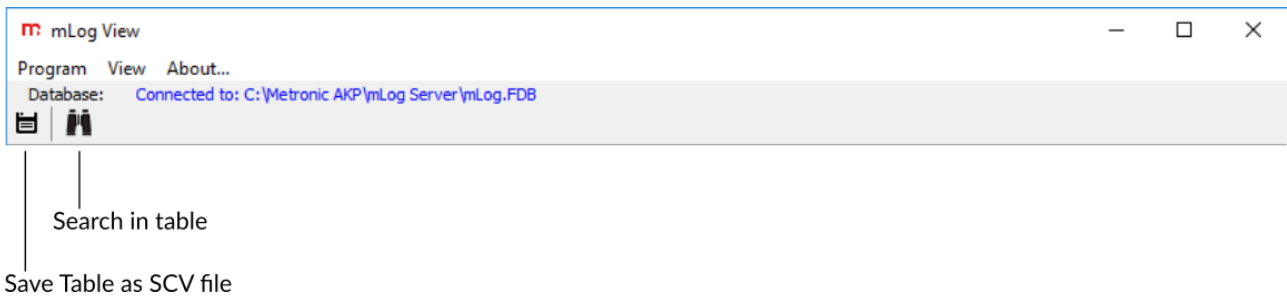


Figure 6.6 The toolbar in the table window

The *Search in table* function enables finding a record with a specific value or saved at a specific time.

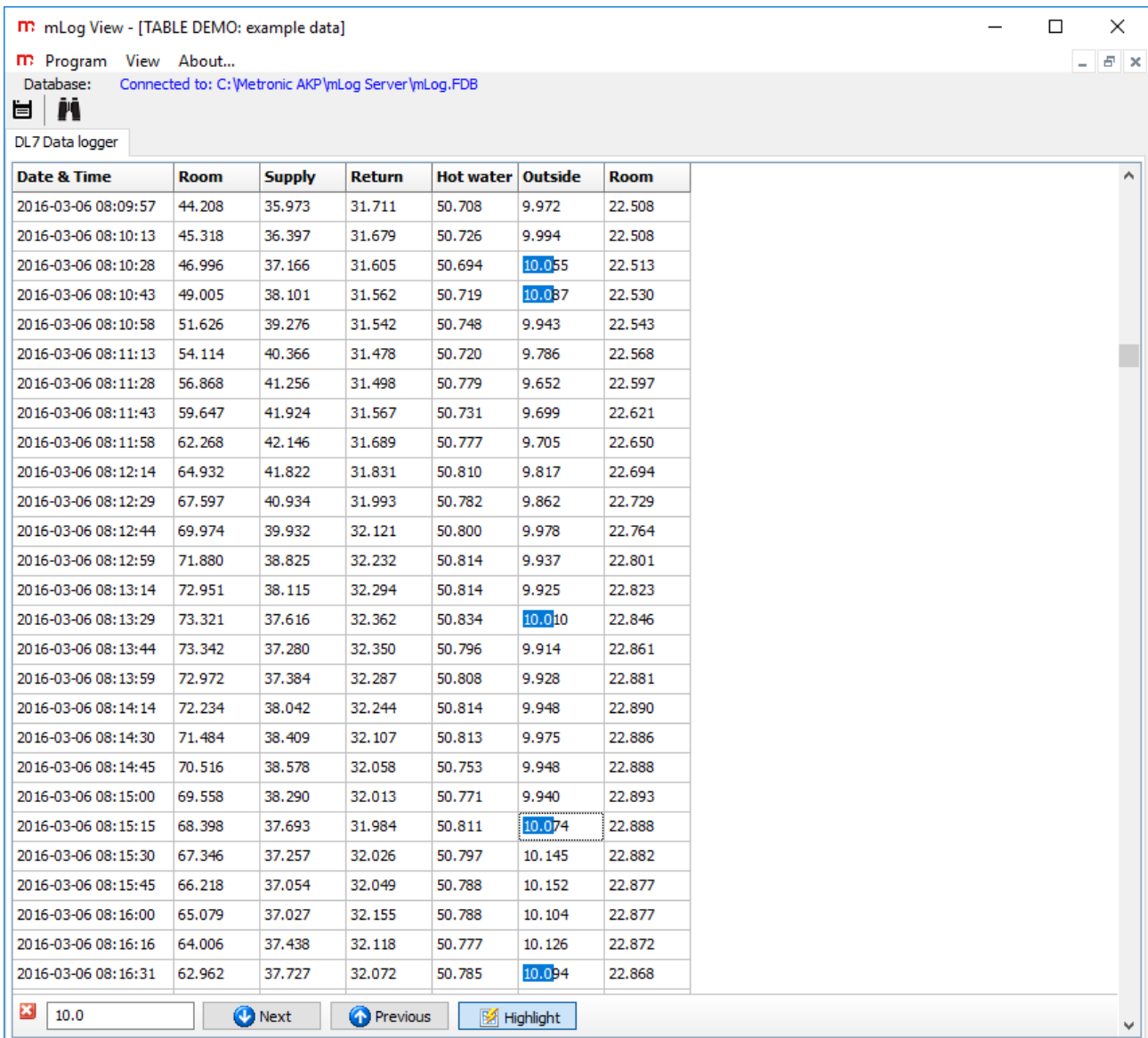


Figure 6.7 An example of using the Search in table function

## 7 UPDATING DATABASE



If the database must be updated, in order to maintain the correct functioning of the program, follow the guidelines in the User Manual.



It is recommended to make a copy of the database before updating it.



It is necessary to have a *mLog DB Update v3.0.0.0* program to update the database.

To update the mLog software, firstly turn off all mLog programs (mLog Server, mLog Client and mLog View), and then run the *mLog DB Update v3.0.0.0* program.

After selecting the current database file location (...), information about the required database file update or information that updating the database is not required will be displayed. After pressing the **Update** button, the program will back up the database and update it to the new version.

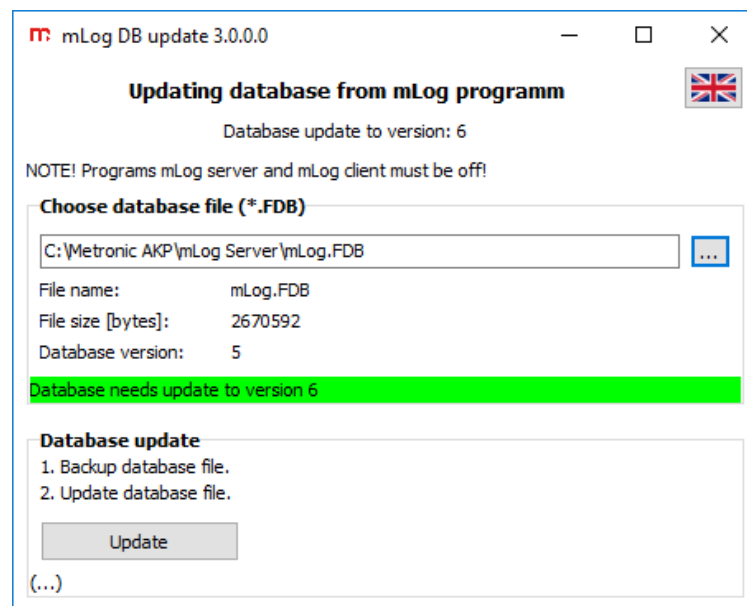


Figure 7.1 Update and backup the database

The correctness of the newly created database file can be checked in the same way using the *mLog BD Update 3.0.0.0* program.

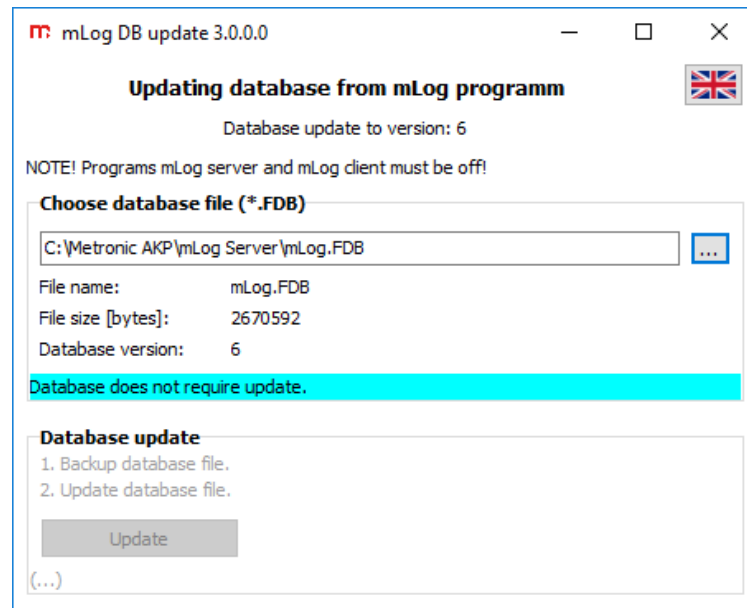


Figure 7.2 Verification of database version compatibility



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## 8 ENTITY LAUNCHING THE PRODUCT ON EUROPEAN UNION MARKET

Manufacturer: METRONIC AKP s.c.  
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