"VIKING HUMIDITY MANAGER" PROGRAM

User   Manual

PAGES 38

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CONTENTS

SUMMARY

This program document contains user instructions on the use and operation of "VIKING Humidity Manager" (hereinafter referred to as the program), intended to provide a connection between Dry-Storage Containers of DC series (hereinafter referred to as DSC) via protocol ModBus RTY for receiving, visual displaying and controlling DSC parameters, collected data archiving and analysis. Data exchange with DSC is carried out via COM-port by interface RS-232. In case of the lack of RS-232 interface on a personal computer (hereinafter referred to as PC), it is possible to use RS-232 - USB converter of Moxa uport 1150 or equivalent.

The program is provided as an installation file and intended to be operated under operation systems Microsoft Windows 7 (with built-in SP1 package)/8/10, professional 32/64-bit version.

Program interface is localized into Russian and English.

The program is supposed to be operated with one connected device.

1. PROGRAM PURPOSES

1.1. Program functional purposes

The program main purposes are as follows: sending detectors' reading commands to COM-port via interface RS-232 (protocol ModBus RTY), which is necessary to receive data from DSC; sending detectors' recording commands in the case of necessity to change DSC settings; displaying received data onto informational areas of graphical user interface; displaying graphs of DSC current parameters; optional saving of data as parameter-containing files according to the user's choice.

The user has a possibility to analyse information about DSC current state in digital form (data output onto informational areas of graphic user interface) and in graphical form (graphs), along with archive information in graphical and tabular forms. There is a possibility of printing graphs and saving them as figures in a chosen format.

The program provides the following functions:

- receiving/sending data via selected COM-port, according to the set port configuration;
- browsing the actual information received from DSC;
- browsing archive information filtered in accordance with the user's criteria;
- long-term storage of DSC configuration information, in the form of *.csv files.
- long-term storage of the information coming from DSC, in the form of *.csv files.
- a possibility of searching and analysing the archive information.

1.2. Program operational purpose

The program is intended to be operated under operation systems Microsoft Windows 7 (with built-in SP1 package)/8/10, professional 32/64-bit version. The program is not intended to be operated on PC without physical COM-port or COM-port implemented with RS-232 - USB converter.

2. MINIMUM REQUIREMENTS FOR RUNNING THE PROGRAM

2.1. Minimum hardware requirements

The minimum set of the used hardware should include a computer with the following characteristics:

– CPU Intel Core 2 Duo with clock frequency of 2200 MHz and higher;
– Random Access Memory not less than 1 GB;
– Hard Disk Driver volume 160 GB and above;
– Video Random Access Memory not less than 1 GB;
– COM-port (physically or implemented with interface converter).

2.2. Minimum software requirements

The program is intended to be operated under operation systems Microsoft Windows 7 (with built-in SP1 package)/8/10, professional 32/64-bit version.

3. RUNNING THE PROGRAM

3.1. Program installation

The program is delivered as an installation file - SetupHumidityManager.msi.

To install the program launch SetupHumidityManager.msi file under Local Administrator.

On the Welcome Page of the Installation Wizard (see fig. 1) click "Next" button to continue the app installation.
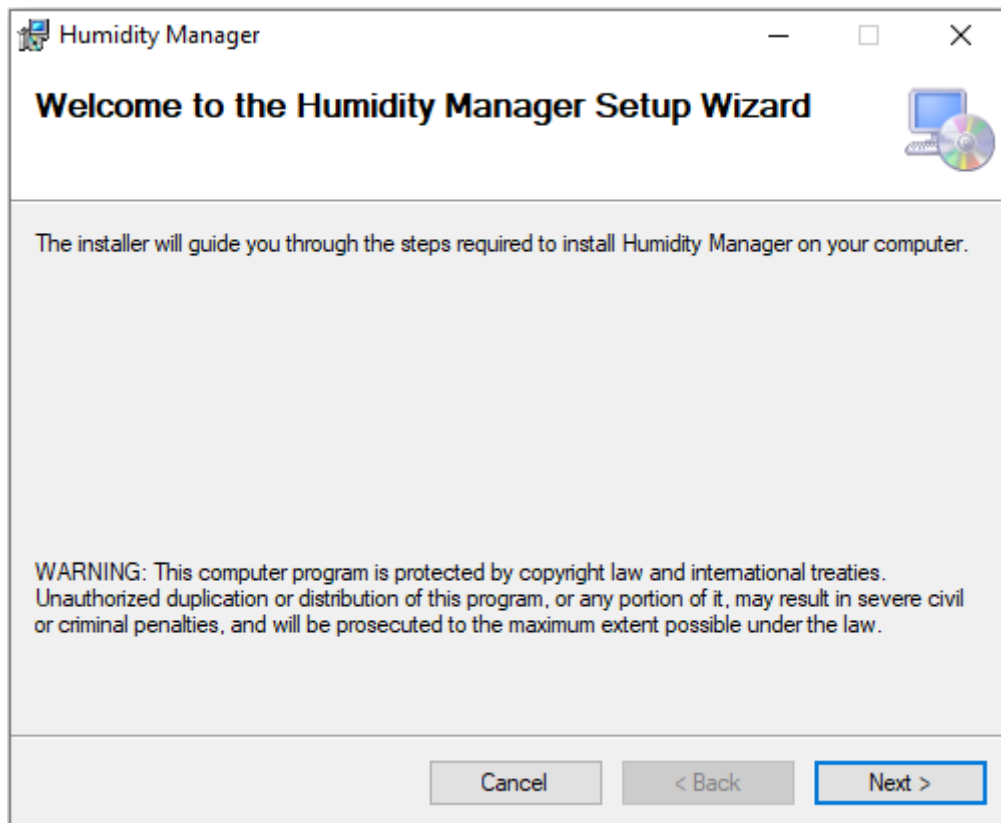
Figure 1

On the next page of the Installation Wizard (see fig. 2), choose a folder to install the app. By default, for a 64-bit operating system, the application will be installed into the folder: C:\Program Files (x86)\VIKING\Humidity Manager\, for 32-bit operating system: C:\Program Files\VIKING\Humidity Manager\.

If needed, the folder can be changed with "Browse" button.

If the app is being installed for multiple users of the same PC, option "for all users" should be left as it is, otherwise option "only for me" can be selected.

To continue the app installation, click the "Next" button.
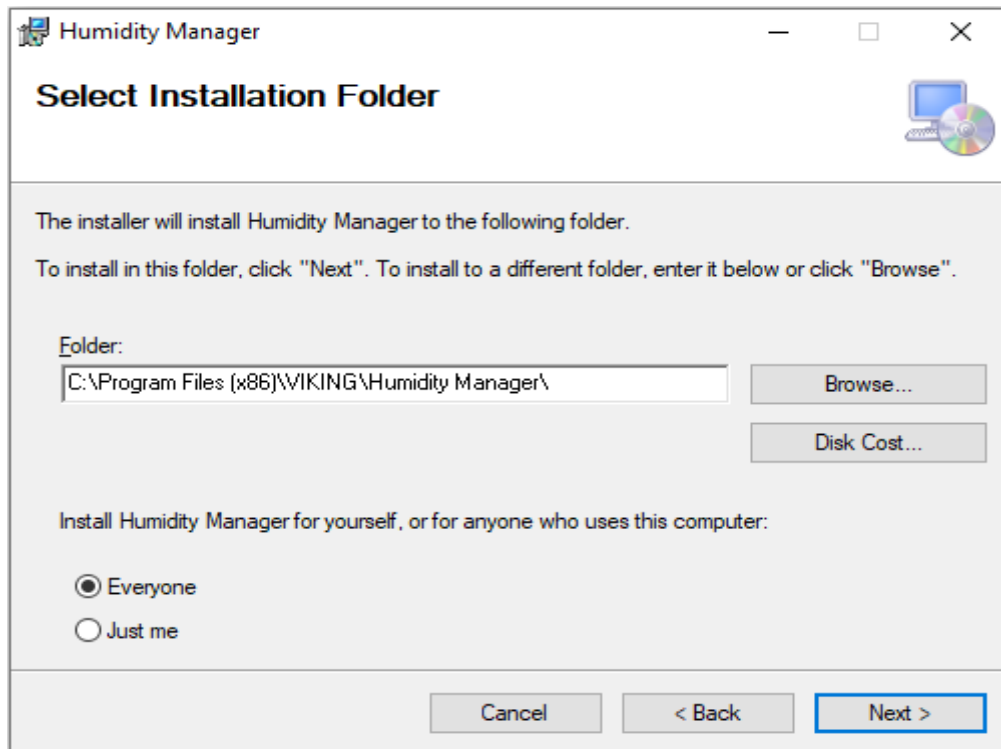
Figure 2

On the next page of the Installation Wizard (see fig. 3), click "Next" button to continue the app installation.
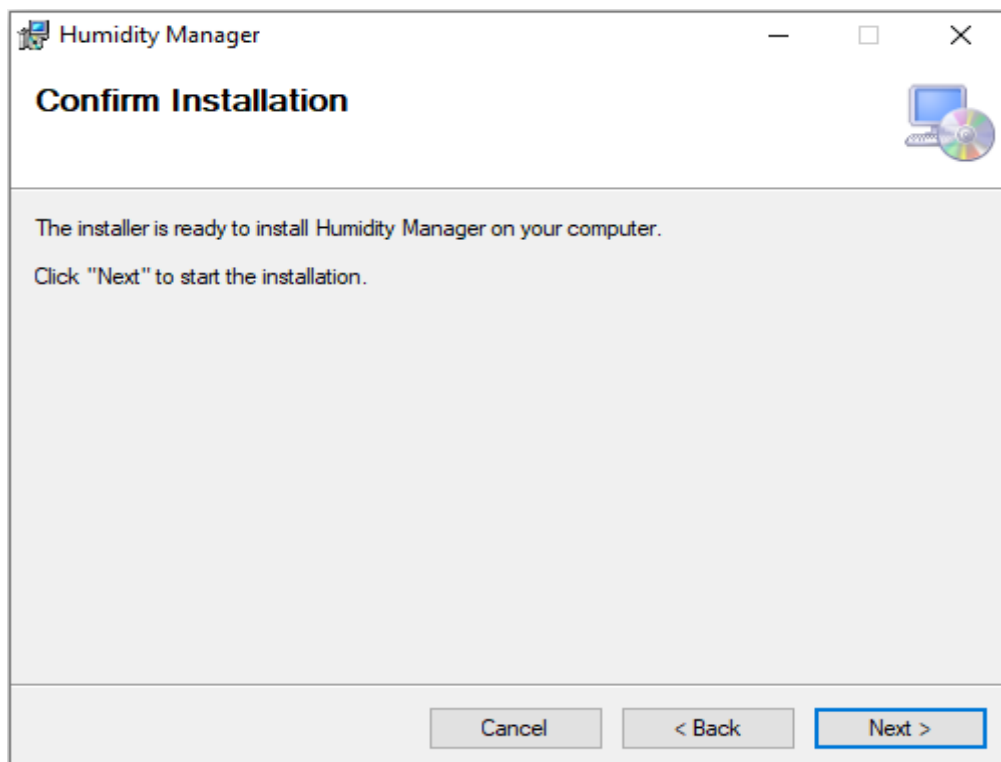
Figure 3

On the next page of the Installation Wizard (see fig. 4), user is informed about finishing the installation procedure. To exit the Installation Wizard, click the "Close" button.
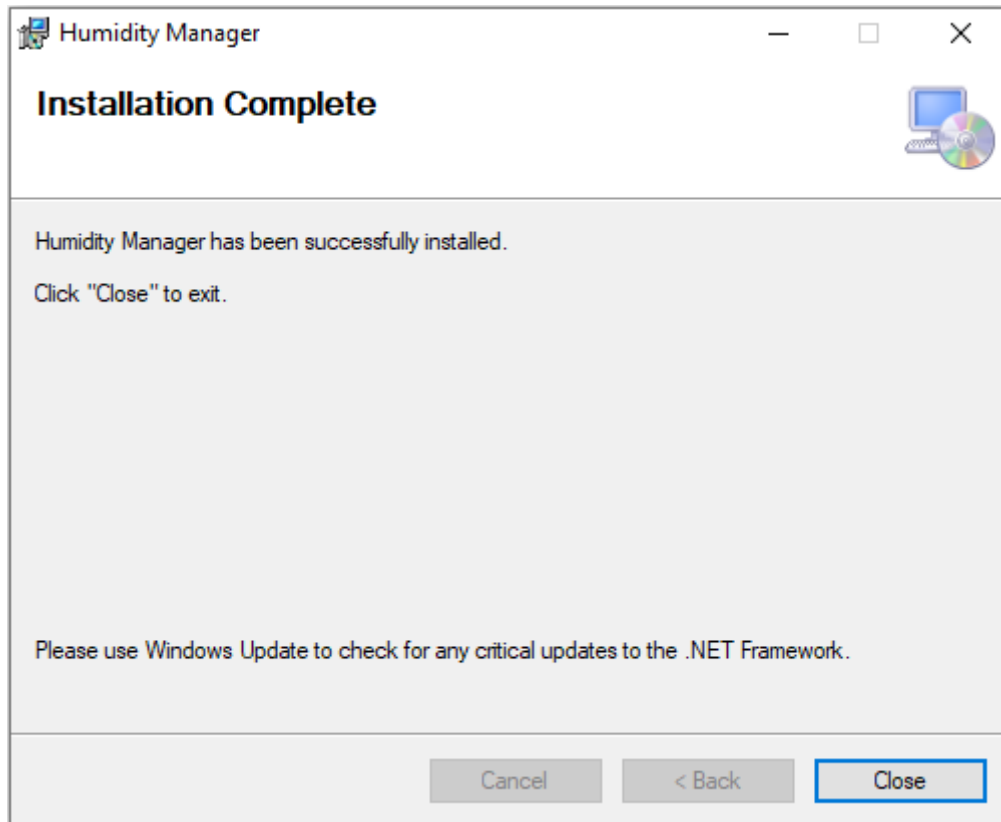
Figure 4

The application has been installed.

In the folder "Start"\"All programs"\"VIKING Humidity manager", there is a label of program "VIKING Humidity manager". The label is also placed on the user's desktop.

3.2. Starting the program

To start the program, click the label "VIKING Humidity manager" on the desktop or in the folder "Start"\"All programs"\"VIKING Humidity manager". The program can be also started by running the file HumidityManager.exe, located in the program installation folder.

By default, for a 64-bit operating system, the program is installed into the folder: C:\Program Files (x86)\VIKING\Humidity Manager\, for 32-bit operating system: C:\Program Files\VIKING\Humidity Manager\.

Initial view of the program is shown on figure 5.
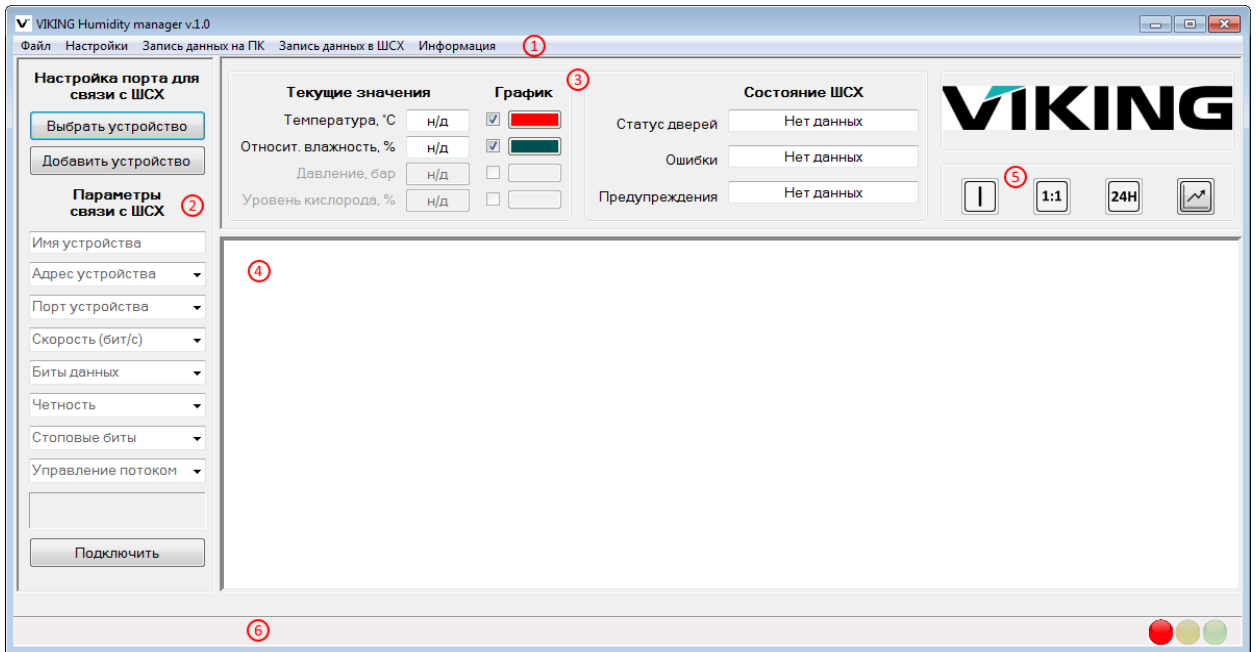
Figure 5

3.2.1. Application interface

3.2.1.1. VIKING Humidity Manager Application Main Window

While starting, the main form of the program appears (see fig. 5), containing:

- tools menu of the program; **1**
- port settings area to set parameters of connection to DSC **2**
- areas of current values output into the program informational fields; **3**
- areas for displaying data in the form of graphs; **4**
- areas of buttons to shift between graphs and operations history; **5**
- status bar to display messages for user and to indicate current DSC state. **6**

All cursor movements through menu items and form buttons are performed by mouse manipulator. While opening drop-down menus, click the corresponding menu item with the mouse left button.

3.2.1.1.1. Tools menu
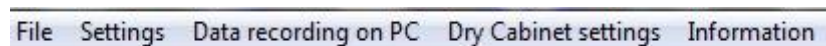
Figure 6

The tools menu of the program (see fig. 6) is located in the upper part of the main window. It includes the following items:

- "File";
- "Settings";
- "Save data on PC";
- "Save data on DSC";
- "Help".

3.2.1.1.1.1. Menu item "File"

By the user's command, after selecting the menu "File" item, a drop-down menu appears (see fig. 7) letting the user to select: "Open Log-file", "Exit", "Print graph 'Current parameters values'", "Print graph 'Parameters values for the last 24 hours'".
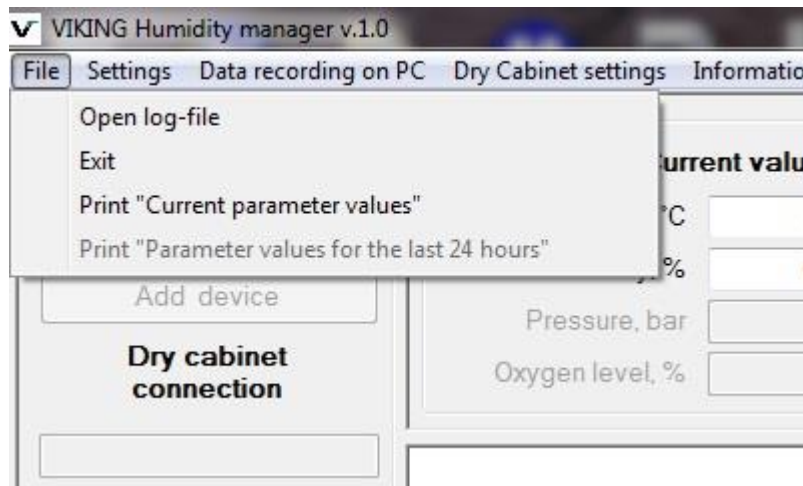
Figure 7

3.2.1.1.1.1.1. Sub-menu item "Open Log-file"

The sub-menu item "Open Log-file" is used to open the file that stores previously saved DSC parameters.

By the user's command, after selecting the sub-menu item "Open Log-file", the system dialogue window appears letting the user select a file in the program work folder. By default, the program work folder is located in the folder "Libraries\Documents\VIKING" (see fig.8).

In this system window, there is a possibility to select the format of the archive file (*.csv or *.txt).
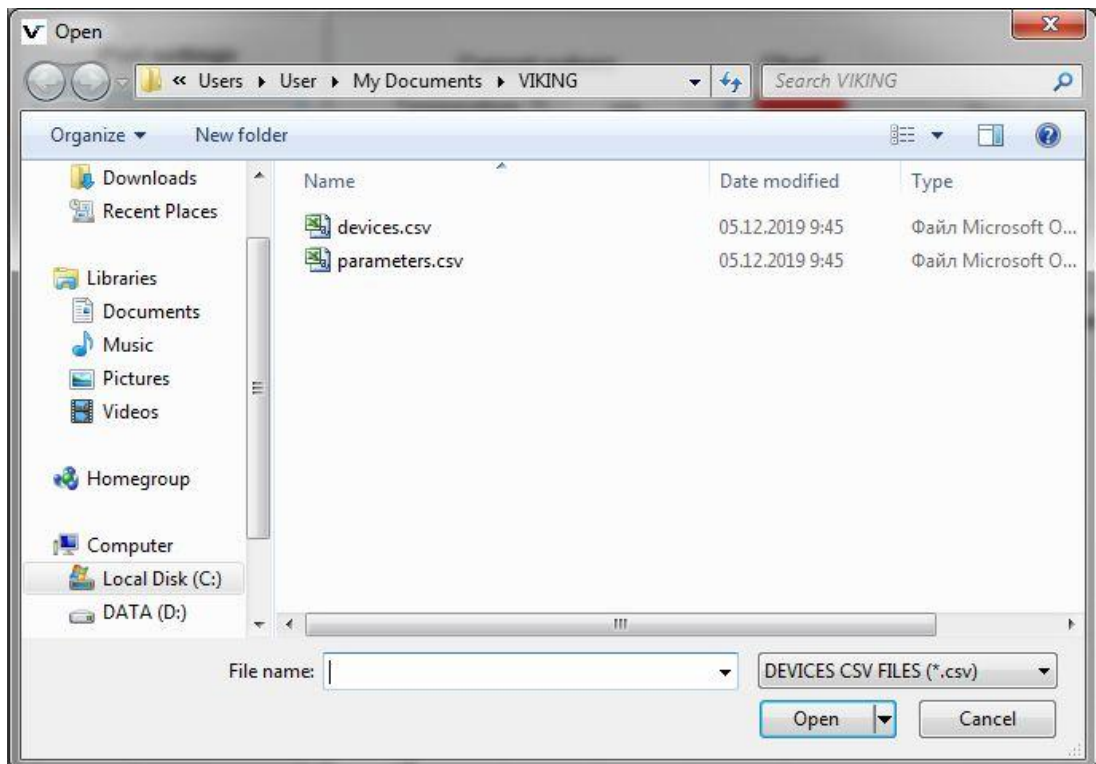
Figure 8

If the program succeeds in reading the selected file, the new "Log-file" window pops up displaying the received data in the tabular form (see fig. 9).

Figure 9

3.2.1.1.1.1.2. Sub-menu item "Exit"

Sub-menu item "Exit" is used to quit the program.

By the user's command, after selecting the sub-menu item "Exit", the program is terminated. If a Log-file is being saved during this operation, the user is warned with a corresponding message.

3.2.1.1.1.1.3. Sub-menu item "Print graph 'Current parameters values'"

The sub-menu item "Print graph 'Current parameters values'" is used for printing the graph "Current parameters values" when it is displayed in the graphic area of the main program form.

3.2.1.1.1.1.4. Sub-menu item "Print graph 'Parameters values for the last 24 hours'"

The sub-menu item "Print graph 'Parameters values for the last 24 hours'" is used for printing the graph "Parameters values for the last 24 hours" when it is displayed in the graphic area of the main program form.

3.2.1.1.1.2. Menu item "Settings"

By the user's command, after selecting the menu item "Settings", a drop-down menu unfolds (see fig. 10) letting the user select the sub-menu "Select a language".
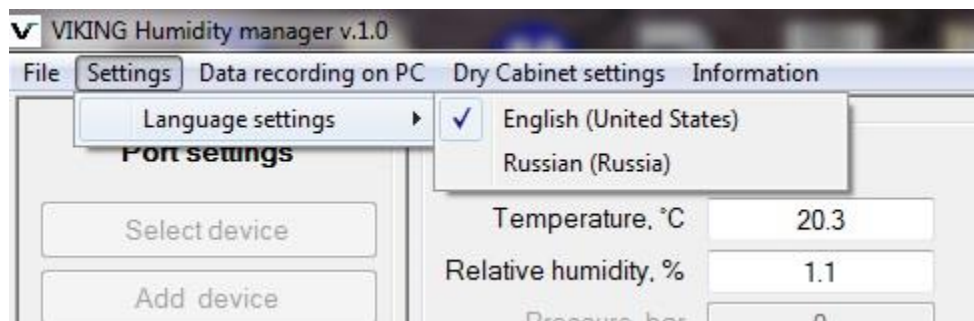
Figure 10

3.2.1.1.1.2.1. Sub-menu "Select a language"

By the user's command, after selecting the sub-menu "Select a language", a drop-down menu unfolds letting the user select the items "English (USA)" and "Russian (Russia)".

If a sub-menu item is chosen, the program is localized into the selected language. The default language is Russian.

3.2.1.1.1.3. Menu item "Save data on PC"

By the user's command, after selecting the menu item "Save data on PC", the new program window "Save data on PC" pops up (see fig. 11) letting the user set the parameters of saving data into a file, its format, polling interval, the interval of creating a new archive file, as well as start/finish saving data into a file.

Figure 11

3.2.1.1.1.4. Menu item "Save data on DSC"

By the user's command, after selecting menu item "Save data on DSC", the new program window "Save data on DSC" pops up (see fig. 12) letting the user synchronize DSC clock, set new values for parameters and turn on/off modules available for control.
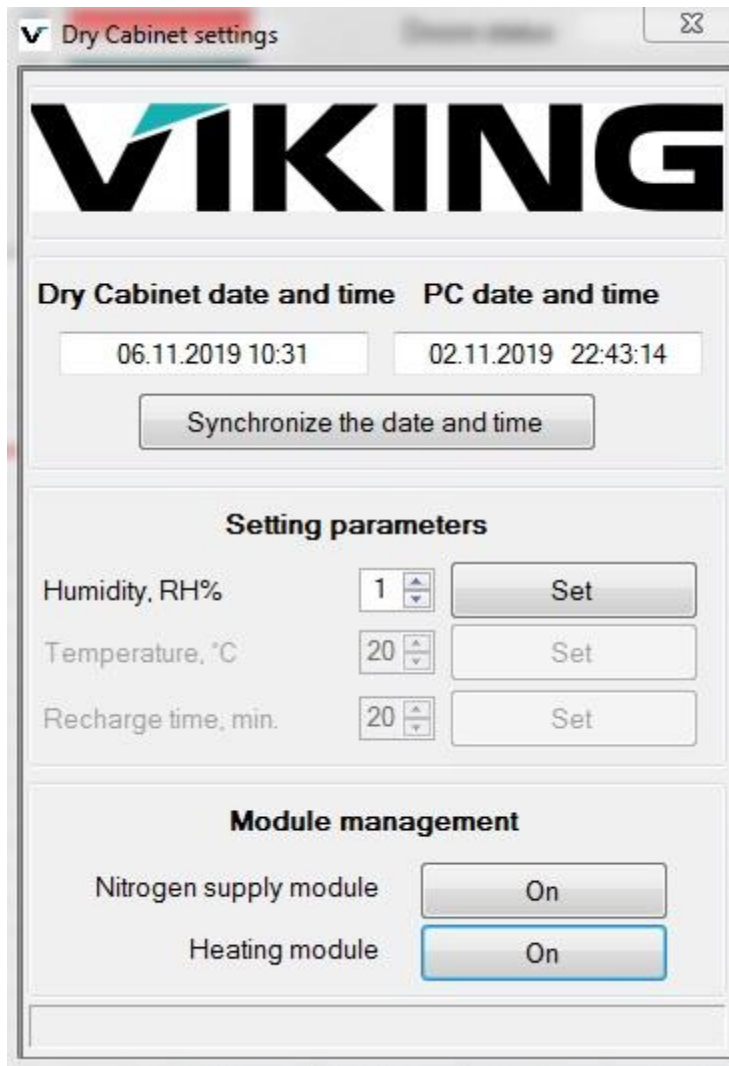
Figure 12
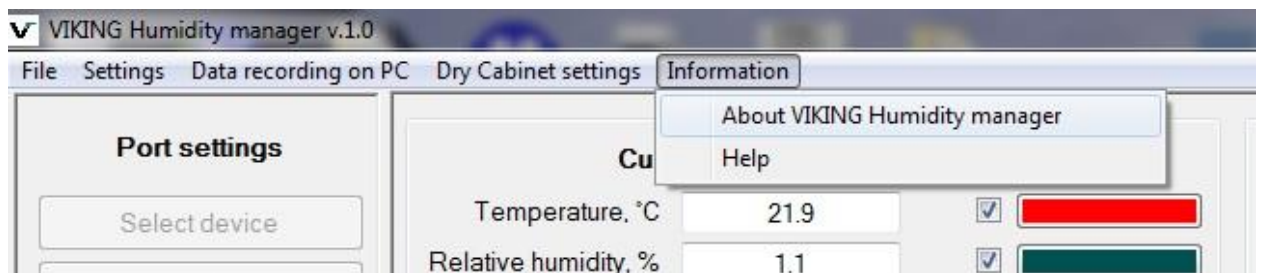
Figure 13

3.2.1.1.1.5. Menu item "Help"

By the user's command, after selecting the menu item "Help", a drop-down menu unfolds (see fig. 13) letting the user select the sub-menu items "About the program" and "Help topics".

3.2.1.1.1.5.1. Sub-menu item "About the program"

By the user's command, after selecting the sub-menu item "About the program", the new program window "About program VIKING Humidity manager" pops up (see fig. 14) containing information about the program version and the software developer contact information.
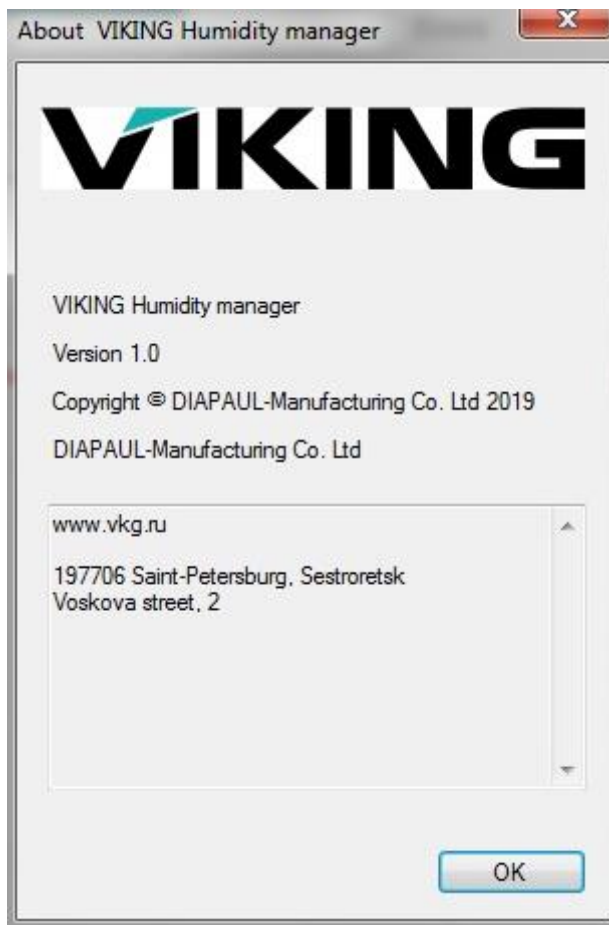
Figure 14

3.2.1.1.1.5.2. Sub-menu item "Help topics"

By the user's command, after selecting the sub-menu item "Help topics", the new program window "Help topics" pops up containing information on the software and DSC operation.

3.2.1.1.2. The port setting area for DSC connection

The area of port settings for connection with the DSC (see fig. 15) is located in the left part of the program main window. It consists of the buttons "Select a device", "Add a device", "Connect", the information field for messages about the DSC connection state and the "DSC connection parameters" area with the information field for entering the device name and information fields with drop-down lists with permissible values that allow the user to configure the COM-port for the DSC connection.

On the first launch every information field provides a grey-coloured hint for entering the necessary parameter.

Figure 15

3.2.1.1.2.1. "Select a device" button

The "Select a device" button is used to open the file containing the previously saved DSC configuration that includes DSC parameters and COM-port parameters for connecting with DSC.

By the user's command, after pushing the button "Select a device", the system dialogue window appears letting the user to select a file in the program work folder. By default, the program work folder is located in folder "Libraries\Documents\VIKING" (see fig.8).

If the program succeeds in reading the selected file, the new window "Select a device" pops up displaying the received data in the tabular form (see fig. 16).

DeviceID	DeviceModel	VersionPO	DeviceAddress	NamePort	BaudPort	DataBitsPort	ParityPort	StopBitsPort	FlowControlPort
Dry cabinet	DC-6	V03.11	5	COM7	115200	8	None	1	None

Figure 16

By double-clicking the mouse on the device parameters, the current window is closed, and the information fields of the "Parameters for DSC connection" area (see fig. 15) are filled with the values of the selected device parameters.

3.2.1.1.2.2. "Add a device" button
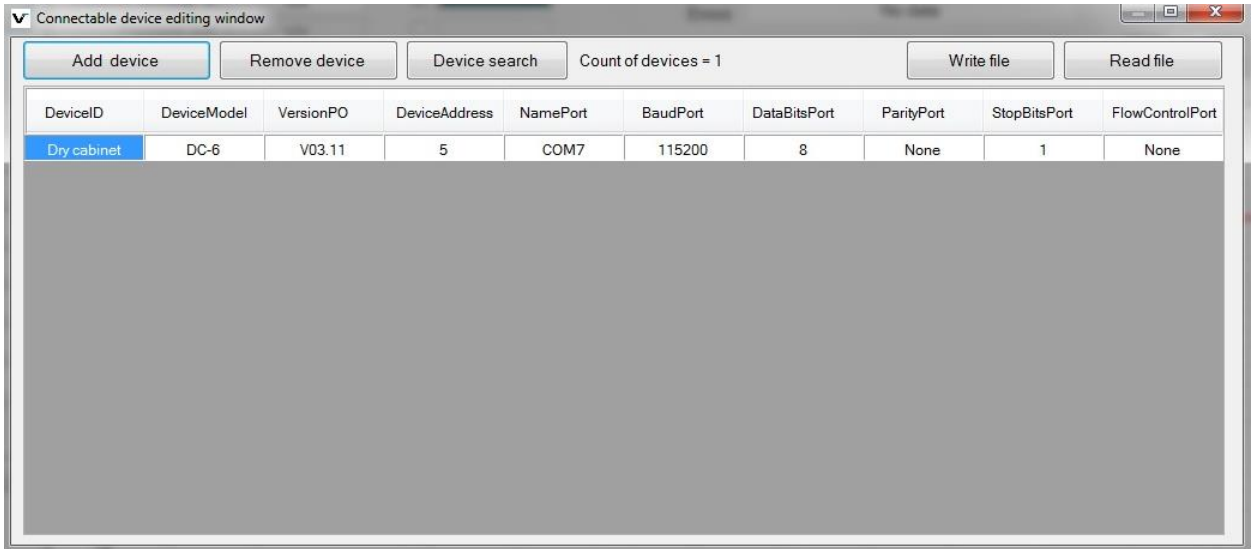

Figure 17

By the user's command, after clicking the "Add a device" button, the new program window "Editing devices to be connected" pops up (see fig. 17) allowing the user to add new devices (DSC configurations), delete devices, perform searching for devices, perform saving data into a file, and reading data from a file.

3.2.1.1.2.3. Area "Parameters for DSC connection"

The "Parameters for DSC connection" area consists of 8 information fields which allow the user to configure the COM-port for connection with the DSC, and set the device name and address.

The "Device name" field is optional for connection to the device, all other fields are obligatory.

The "Connect" button becomes active only when all obligatory fields in the area are filled.

3.2.1.1.2.4. The information field of the DSC connection state

This information field (see fig. 18) displays information about the state of the connection to the DSC.

If the connection to the device/disconnection from the device is successful, the corresponding green-coloured message appears, otherwise the red-coloured warning shows up.
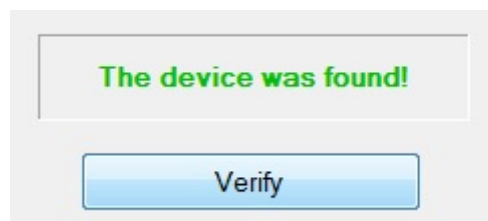
Figure 18

3.2.1.1.2.5. "Connect"/"Disconnect" button

By the user's command, after clicking the "Connect" button, the DSC parameters will be read. If the procedure is successful, the label on the button changes into "Disconnect" (see fig. 18), the fields of COM-port settings and the selection buttons turn inactive, and the DSC polling starts with the once per second interval, displaying the current DSC parameters in the information fields of the main window, the graphic area, and the status bar.

If the reading of the DSC parameters fails, the label on the button changes into "Connect new" (see fig. 19), the device is not connected and the user is asked to change the connection parameters to continue operating the device.

Figure 19

By the user's command, after clicking the "Disconnect" button, the current session of the DSC connection is closed. If the operation successful, the label on the button changes into "Connect", the COM-port settings fields, the buttons for selecting and adding the device turn active.

3.2.1.1.3. Area of current values information fields

The area of the information fields of the DSC parameters current values (see fig. 20) is located in the upper part of the program main window and consists of the "Current values", "Graph" and "DSC state" sub-areas.

On the launch of the program, the information fields of the "Current values" and "DSC state" sub-areas are filled with the initial values "n/a" and "No data" respectively, due to the fact that there is no connection to the device at the time of the program start.
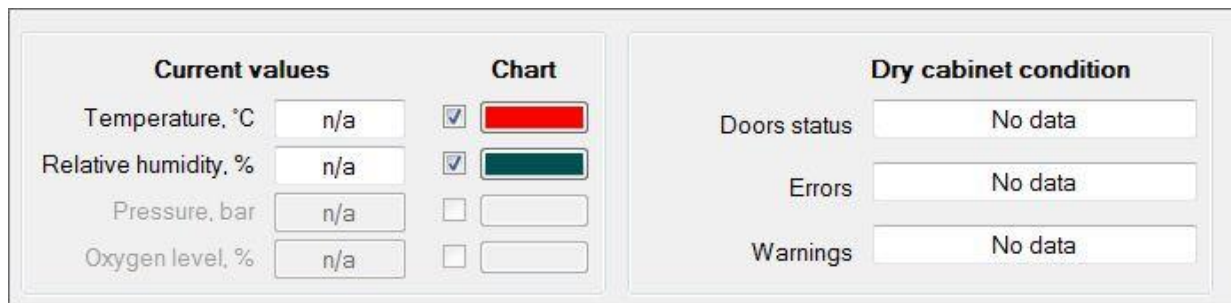
Figure 20

If the connection to the DSC is successful, the information fields of the "Current values" and "DSC state" sub-areas are updated once per second displaying the parameters values received from the DSC.

If the connection to the device is lost, these information fields are filled with the initial values.

3.2.1.1.3.1. Sub-area "Current values"

The "Current values" sub-area displays the numeral values of the current parameters.

3.2.1.1.3.2. Sub-area "Graph"

The "Graph" sub-area contains check-boxes and coloured buttons related to the parameters of the "Current values" sub-area. With the coloured buttons the user can change the colour of the line of the chosen parameter. With the check-boxes the user can turn on/off the display of the chosen parameter on the graph.

By default, the current values of temperature and relative humidity are formed on the graph.

3.2.1.1.3.3. Sub-area "DSC state"

The "DSC state" sub-area displays the current information about the door state, errors and warnings.

If the doors are kept open for more than 1 second, the information field "Doors state" displays the time when the DSC doors are open.

If the doors are kept open for more than 30 seconds, the information field "Doors state" changes its colour into red.

While processing the readings from the DSC, the information fields "Errors" and "Warnings" display the values in numerical form or as the word "No". If these fields display numerical values, additional information about them is displayed in the status bar, located in the lower part of the program window.

3.2.1.1.4. Graphic area

The graphic area is located in the middle part of the program main window. This area may display the graphs "Current parameters values" (see fig. 21), "Parameters values for the last 24 hours" (see fig. 22) and the information field "Events history" (see fig. 23).

When the program starts, this area is empty.

If the connection to the DSC is successful, the graph "Current parameters values" is displayed in this area by default.

Figure 21

In the case of failure to read the DSC parameters while connecting to the device, this area displays the information field "Events history", containing the log of communication with the DSC.

If the connection with the device is lost, the user is given a warning about this event. If the connection does not recover in 3 minutes, the session finishes automatically. If the connection has been recovered before this time, the message about the connection recovery pops up and the session continues.

In the graphs lines of different colour represent the graphs of the selected DSC parameters (axis X - time, axis Y - value). The line colour and the form of parameter representation can be changed in the sub-section "Graph" of the information fields area (see fig. 20).

Scrolling up / down in the area of the current graph allows the user to change the graph scale.
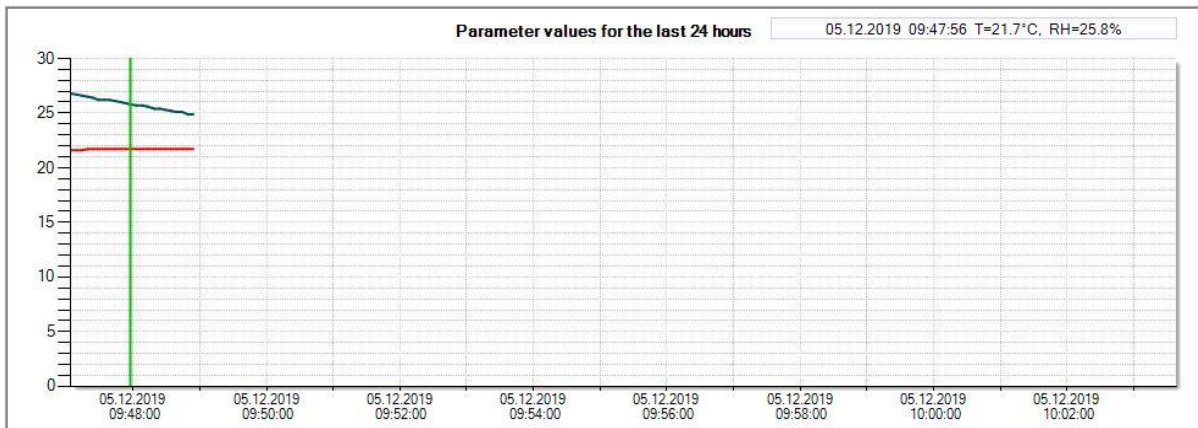

Figure 22

Figure 23

The data represented in the graph "Current parameters values" is updated every second. These are the values of parameters received from the DSC.

The data represented in the graph "Parameters values for the last 24 hours" is updated every 5 seconds. These are the values of parameters received from the DSC.

The data represented in the information field "Events history" is updated every second and additionally contains approximate information received from the DSC in the form of registers reading/recording commands (protocol ModBus RTY).

3.2.1.1.5. Buttons area

The buttons area (see fig. 24) is located in the righ upper part of the program main window. This area includes the buttons "Pointer", "Initial scale", "24H" and "Events history".

The button "Pointer" allows the user to turn on/off the displaying cursor and the information in the upper right corner of the graph about the point, where the cursor is located,.

The button "Initial scale" allows the user to reset the scale of the current graph back to the initial scale.

The button "24H" allows the user to change the displaying parameters of the current graph and the graph of values received in the last 24 hours.

The button "Events history" allows the user to switch the display of the graph to the display of the information field "Events history" containing the data on the DSC connection.
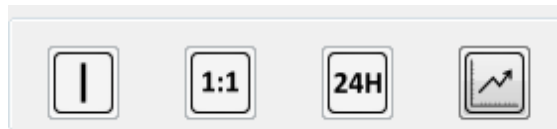
Figure 24

3.2.1.1.6. Status bar

The status bar displays information messages. The indicators in the right part signal if the DSC state is different from the norm. The DSC state is normal if the information fields of the "DSC state" area (see fig. 20) have the values as follows: "Doors state" - "Closed", "Errors" - "No", "Warnings" - "No". In this case the green indicator is lit.

In the case of any warnings or errors, the red indicator is lit.

When the doors are kept open for less than 30 seconds, the indicator turns yellow, after 30 seconds it turns red.

3.2.1.2. Window "Log-file"

The "Log-file" window (see fig. 9) includes the upper buttons panel and the information field to enter the data received from a file, in the form of a table.

| | | | Save chart | Print chart | Count of strings = 11508 | Display data on the chart | Read another file |

Figure 25

The upper panel of this window (see fig. 25) contains the following components: the buttons "Pointer", "Initial scale", "Data selection", "Save graph", "Print graph", the information field "Number of records", the buttons "Display data in the graph" and "Read another file".

The "Pointer" button allows the user to turn on/off the display of the cursor and the information in the upper right corner of the graph about the point, where the cursor is located,.

The "Initial scale" button allows the user to reset the scale of the current graph back to the initial scale.

The "Data selection" button allows the user to set a range of dates for the data received from the current file within the indicated period to be displayed on the graph.

The "Save graph" button allows the user to save the graph displayed in this window in the form of a picture of the chosen format.

The "Print graph" Button allows the user to print the graph displayed in this window.

The informational field "Number of records" contains information about the volume of the data received from the file and displayed in the form of a table or a graph depending on the form of the information displayed at that moment.

The "Display data in the graph" button displays the data received in the tabular form as a graph.

Scrolling up / down in the area of the current graph allows the user to change the graph scale.

The buttons "Pointer", "Initial scale", "Data selection", "Save graph", "Print graph" are inactive on opening the window. These buttons turn active when data is displayed in the form of a graph by the user's command after clicking the "Display data in the graph" button.

The button "Read another file" allows the user to select a new file containing archive data to be displayed in the tabular form.

3.2.1.3. Window "Save data on PC"

The window "Save data on PC" (see fig. 11) allows the user to define the necessary settings of recording files with the chosen parameters.

In the upper part of the window "Select parameters to record" there are check-boxes which allow the user to select the necessary parameters to be recorded into a file. When a check-box is not ticked, "-" is recorded for this parameter.

The informational field "Requesting interval" allows the user to choose how often the data will be recorded into a file.

The informational field "Create new file" allows the user to set an interval for creating a new log file. This information field has the following permissible

parameters: "One per hour", "One per day", and "Once per week". By default, "Once per day" is set here.

The information field "Path to a file" is filled with a system dialog window for selecting a folder that pops up by clicking the button "Browse". By default, the folder for recording files is the program work folder.

The informational field "File name" is filled with the word "parameters" by default. If necessary, the user can change this name.

The next information field with a drop-down list allows the user to set a file extension. This field has two options "csv" and "txt".

If the completion of all information fields and the connection to the DSC are successful, the button "Start recording" turns active.

By the user's command, after clicking the button "Start recording", the recording of the necessary parameters into a file is started, the button changes its label into "Stop", the status bar displays the message "Recording a log file...", the information field above the button displays information about the file name and the time left until the new file creation.

By the user's command, after clicking the "Stop" button, the recording of the necessary parameters into a file is finished, and the button changes its label back to "Start recording".

While creating a file, the time of its creation is added to its name. The new file is created in the same folder automatically within the set interval.

3.2.1.4. Window "Save data on DSC"

The window "Save data on DSC" (see fig. 12) allows the user to manage the DSC settings, turn on/off installed modules, and synchronize the clock.

The informational field "DSC date and time" is filled with the current date and time, set in the DSC. In the case of failure to read the data, the message "No data" appears in this field. This field is updated every minute.

The informational field "PC date and time" is filled with the corresponding values from the PC. This field is updated every second.

By the user's command, after clicking the button "Set date and time in DSC", the synchronization of the device clock and the PC is started, and runs the command of recording the current date and time of the PC into the DSC.

After opening this window, the information fields "Humidity", "Temperature", "Oxygen level", "Pressure" of the area "Parameters Settings" are filled with the data received from the DSC. In the case of failure to read the data, the information field located in the lower part of this window displays a red-coloured message requesting the user to check the DSC connection parameters.

When the value changes in one of the information fields "Humidity", "Temperature" or "Oxygen level", the user can click the button "Set" for a selected parameter to perform the recording of the new value to DSC.

In the case of failure to record the data into the DSC, the information field located in the lower part of this window displays a red-coloured error message.

The "Manage modules" area allows the user to turn on/off the installed modules. If a module is installed into the DSC at the factory, the "On/Off" button related to the module is active. By the user's command, after clicking the "On/Off" button, a request for updating the module state information is sent, along with a request for a current module state. Depending on this, the buttons state changes.

3.2.1.5. Window "Select a device"

The "Select a device" window (see fig. 16) allows the user to receive information about the DSC configurations from a file in the tabular form and select one of them for the current connection session with the device, if necessary.

Work in this window is described in chapter "3.2.1.1.2.1. Button "Select a device" of this manual.

3.2.1.6. Window "Editing devices to be connected"

The window "Editing devices to be connected" (see fig. 17) includes the upper buttons panel and the information field for entering the data received from a file, in the form of a table.

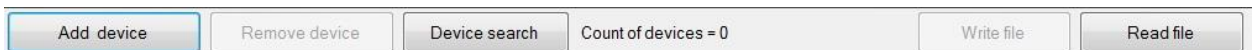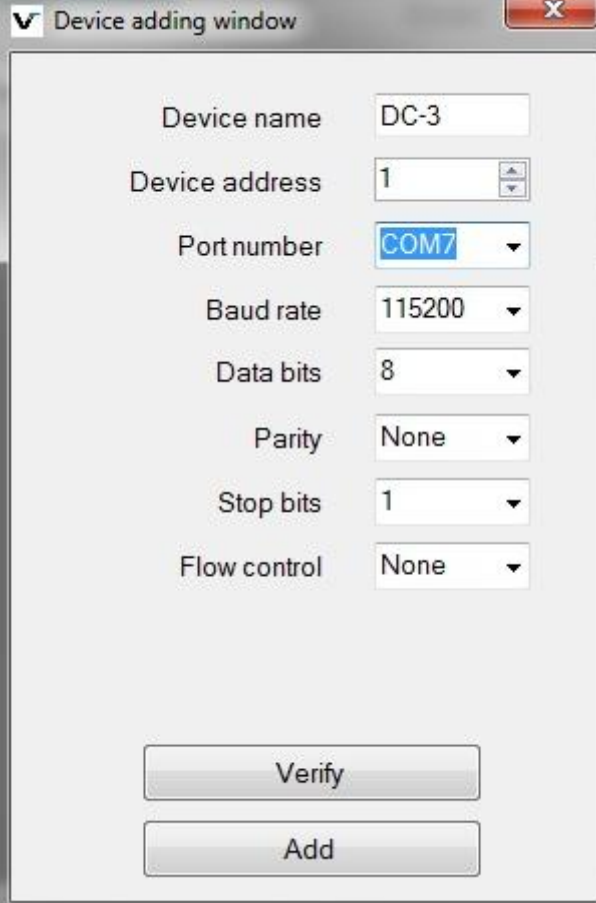| Add device | Remove device | Device search | Count of devices = 0 | Write file | Read file |

Figure 26

The upper panel of this window (see fig. 26) includes the following components: the buttons "Add a device", "Remove a device", "Search for devices", the information field "Number of devices", the buttons "Save as a file" and "Open a file".

The button "Add a device" opens the new dialogue window "Add a device" (see fig. 27) and allows the user to create new configuration for the DSC connection, adding a row of device parameters into a table.

The button "Remove a device" allows the user to delete the selected row with the device parameters from the data table. This button is active when there is at least one data row in the table.

The button "Search for a device" opens the new window "Port parameters" (see fig. 28) and allows the user to find the device connected to one of the system COM-ports, read its parameters, and add them into a table if they are unique (see fig. 33). If the current configuration table already contains the received configuration, the data will not be added to the table again, and the user will see a message about repeating.
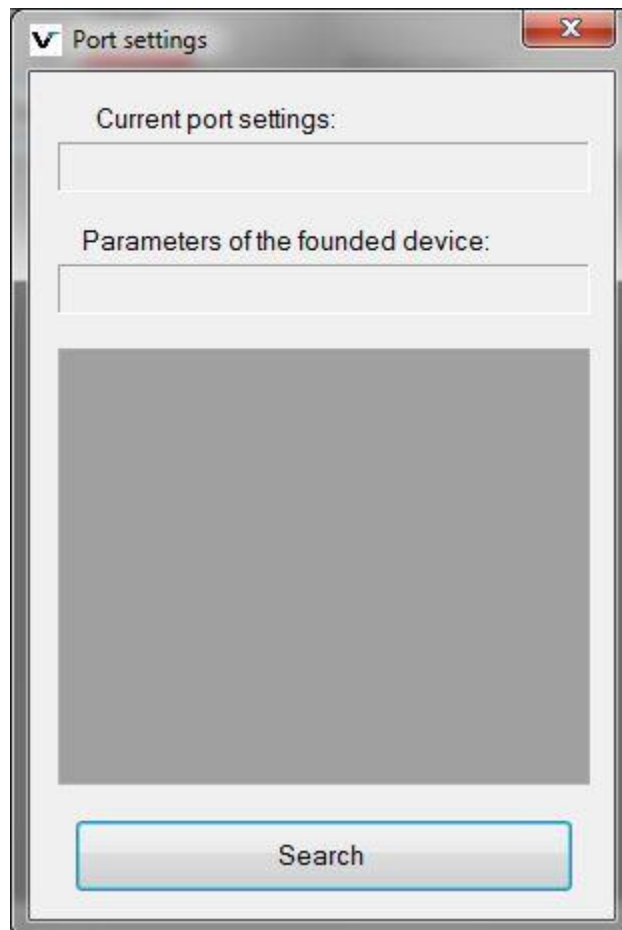

Figure 27

Figure 28

The informational field "A number of devices" contains information about the number of data rows in the table.

The button "Save as a file" allows the user to save the table with the entered device configurations as a file. The new file has the extension "*.csv". By the user's command, after pressing the button "Save as a file", the system dialogue window appears letting the user to select a file in the program work folder. By default, the program work folder is located in folder "Libraries\Documents\VIKING" (see fig.8). If necessary, the folder and the file name can be changed. If the data is successfully saved, the user will see a message with information about the full path to the file, its name, and the confirmation of the operation completion.

The button "Open file" allows the user to select a new file containing archive data to be displayed in the tabular form. By the user's command, after presseing the "Open a file" button, the system dialogue window appears letting the user to select a file in the program work folder. By default, the program work folder is located in folder "Libraries\Documents\VIKING" (see fig.8). If the selected file is successfully opened, the received data displays in the information field for displaying data in the tabular form (see fig. 16).

By double-clicking the mouse on the row with the device parameters, the current window is closed, and the information fields of the area "Parameters for

DSC connection" (see fig. 15) are filled with the values of the selected device parameters.

3.2.1.7. Window "Add a device"

The window "Add a device" allows the user to add and/or check the new device configuration (see fig. 27). The window contains information fields with drop-down lists for entering device parameters, an informational field for displaying information about the device check, the buttons "Check" and "Add".

The information fields with drop-down lists have pre-set values that can be changed if necessary.

By the user's command, after clicking the "Check" button, an attempt to establish a connection with the device with the selected parameters is made. If the connection is successfully established, the information field for displaying information about the device check confirms that the device is connected (see fig. 29), otherwise, it states that the device has not been found (see fig. 30).

The device was found!

Figure 29

The selected device is not available!

Figure 30

By the user's command, after clicking the "Add" button, the current window is closed, and the new row with the selected device parameters are added to the table. To add a new configuration to the table, it is not necessary to have the device connected at this moment. When the user adds a device after successful check, the row of configuration is filled with all parameters (see fig. 31).

DeviceID	DeviceModel	VersionPO	DeviceAddress	NamePort	BaudPort	DataBitsPort	ParityPort	StopBitsPort	FlowControlPort
Dry cabinet	DC-6	V03.11	5	COM7	115200	8	None	1	None

Figure 31

3.2.1.8. Window "Port parameters"

The "Port parameters" window (see fig. 28) allows the user to find the device connected to COM-port, and add the received data to the table containing the devices configurations, if such a device is found. This window contains the information fields "Requested port parameters", "Found device parameters", the information field for displaying the current requested device parameters in the tabular form, and the buttons "Search for a device/Stop the search/Continue the search".

The information field "Requested port parameters" displays information about the parameters of the COM-port requested at that moment.

The informational field "Found device parameters" is filled with the parameters values if the search is successful.

When the polling of all system COM-ports is complete but no device is found, this informational field displays the corresponding notice and the user is prompted to re-start the device polling.
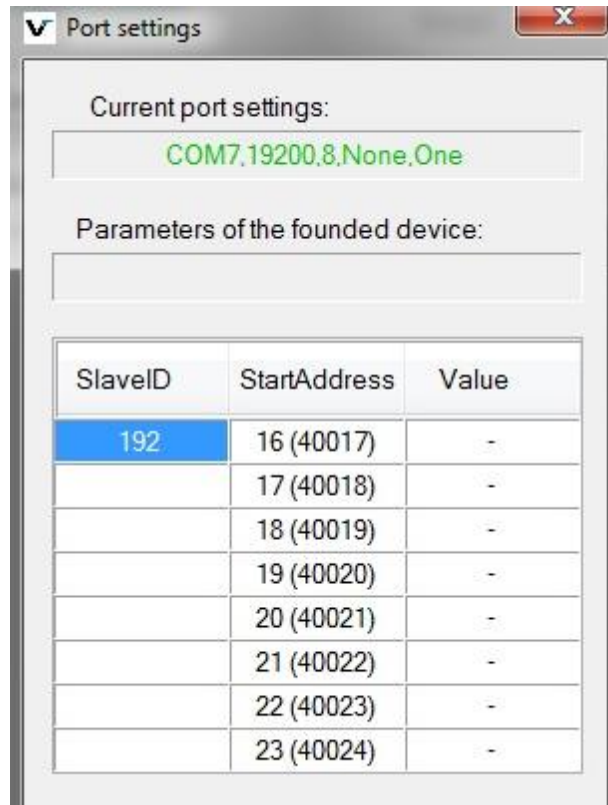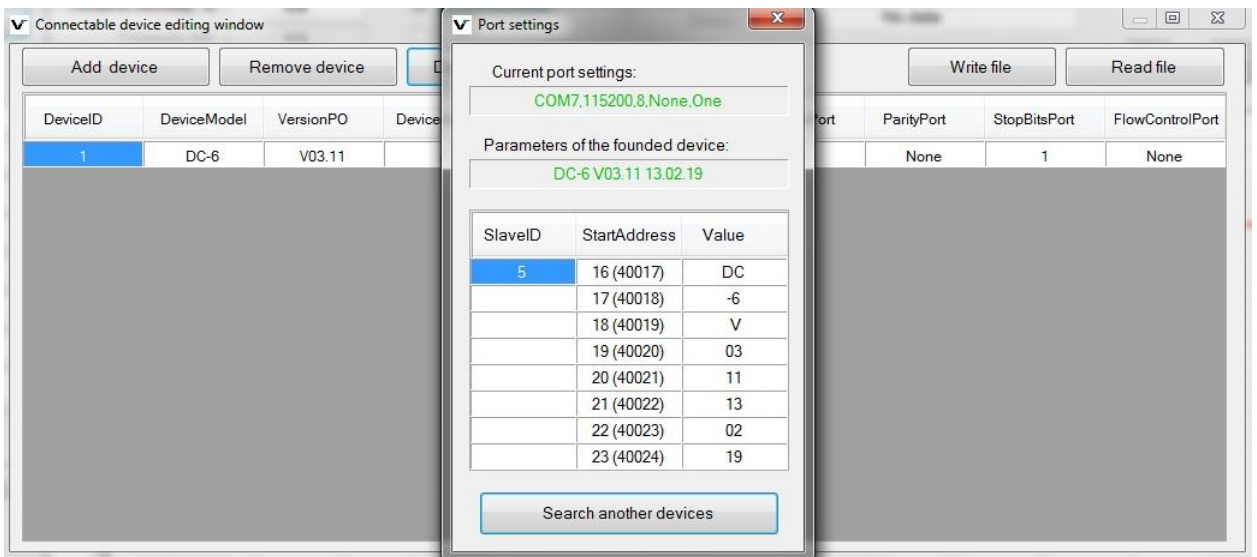
Figure 32

Figure 33

The information field for displaying the parameters of the device requested at that moment displays information about the device address and the data of register 0x0010 of the connected device. When the device is successfully connected and data is successfully read, the table cells are filled with the received values (see fig. 33), otherwise the cells are filled with "-" (see fig. 32).

By the user command, after clicking the button "Search for a device", a search for the device connected to the system COM-port begins, and the button label changes to "Suspend the search".

By the user's command, after clicking the button "Suspend the search", the search for the connected devices temporarily stops and the button label changes to "Resume the search for devices".

By the user's command, after clicking the button "Resume the search", the search for the connected devices re-starts from the last requested configuration, and the button label changes to "Suspend the search".

3.3. Running the application

3.3.1. Running the function of the data receiving by COM-port and displaying the received parameters in the program main window

To check this function, a session of connection to the DSC should be started. The user has to take the following actions:

- start the program;
- fill the information fields of the "DSC connection parameters" area in any convenient way;
- send a request for connection to the device by clicking the button "Connect" in the program main window;
- see the green-coloured inscription displayed in the information field of the DSC connection state (see fig. 18).

The view of the program main window in the case of a successful connection to the device is represented in figure 34.
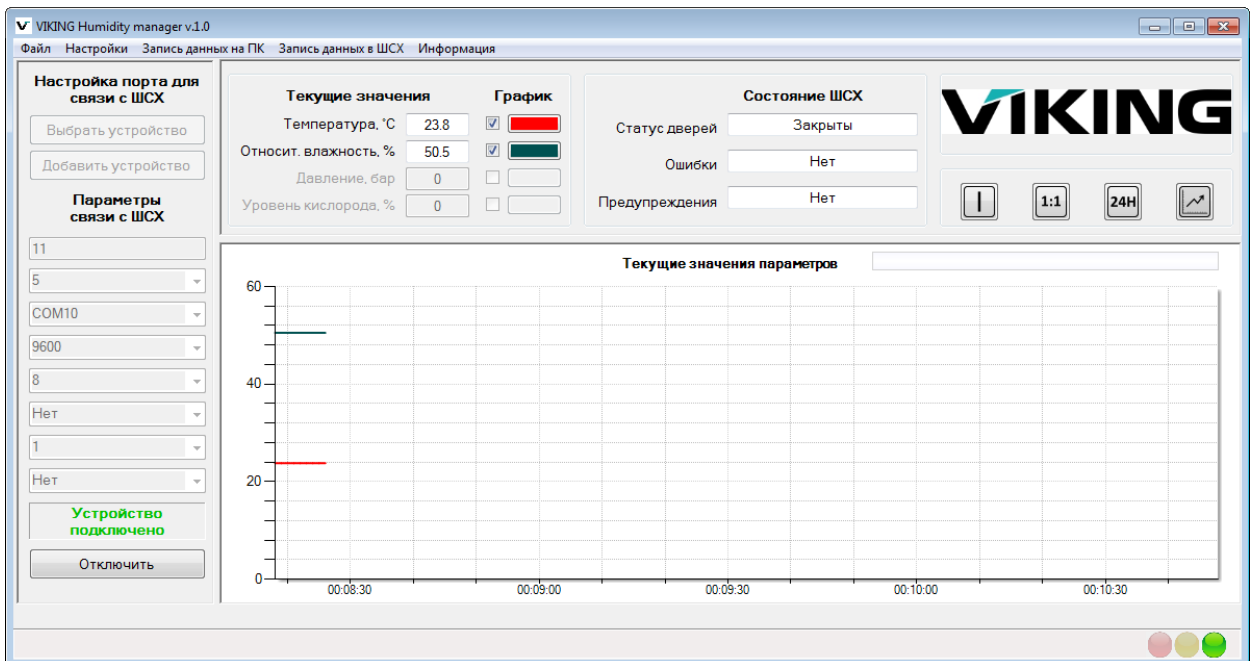

Figure 34

3.3.2. Running the function of saving parameters to a Log-file.

To check this function, the user has to take the following actions:

− establish a DSC connection according to p. 3.3.1. of this manual;
− open a new window of the program "Save data on PC";
− select the parameters to be saved in the file in the area "Select parameters to save";
− fill the informational fields of the window required to start recording of the file;
− send a request to start data recording into the file by clicking the button "Start saving" in the current window;
− see the green-coloured information in the information field above the button "Stop saving" and the message "Recording a log file.." in the status bar.

The view of the window "Save data on PC" in the case of the successful starting of the data recording into the file is represented in figure 35.

Figure 35

3.3.3. Running the function of saving parameters on DSC

To check this function, the user has to take the following actions:

– establish a DSC connection according to p. 3.3.1. of this manual or just fill the information fields of the area "DSC connection parameters" by any convenient way in the main window;
– open the new window of the program "Save data on DSC";
– to save data onto the device, it is necessary to change the required parameter value and click the button "Set", or click the button "Set DSC data and time" to synchronize the device and the PC clocks, or turn on/off the necessary module by clicking the button "On/Off";
– see the green-coloured message in the lower information field of the current window.

The view of the window "Save data on DSC" in the case of the successful starting of the data recording to the device is represented in figure 36.

Figure 36

3.4. Exit the program

To exit the program, use one of the following ways:

− select the sub-menu item "Exit" in the program main window;
− click the standard exit button (cross) in the right upper corner of the program main window;
− if the program main window is active, press simultaneously the keys "Alt" and "F4" on the keyboard.

3.5. Uninstall the program

To uninstall the program, choose the program "Humidity Manager" in the menu "Start"\"Control panel"\"Programs and components" under the local Administrator's right.

In the dialogue window (see fig. 37), it is necessary to confirm the program uninstallation by clicking the button "OK".
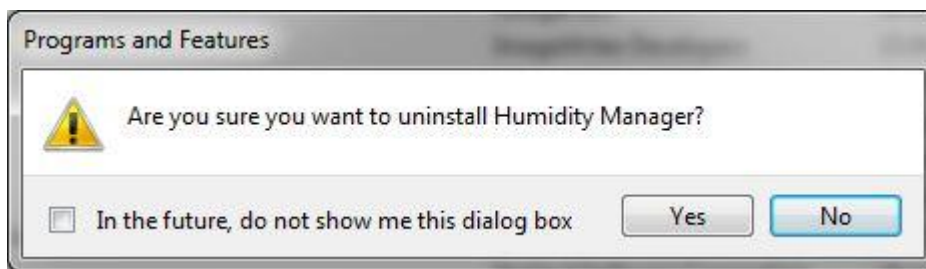

Figure 37

4. MESSAGES

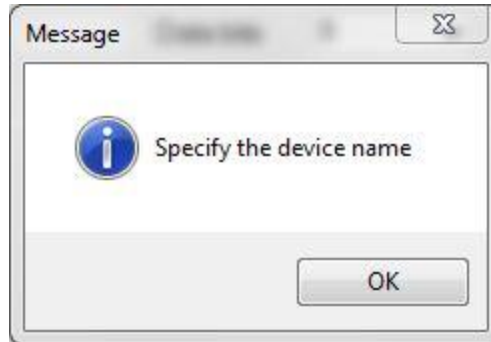| Error type	Error cause	Application action	User action
Error address of the device while trying to connect (see fig. 38)	Information field "Device address" is empty	Connection to the device is not performed	Enter the correct value in the information field "Device address" of the area "DSC connection parameters"
Error address of the device while trying to enter incorrect value in the information field "Device address" of the area "DSC connection parameters" (see fig. 39)	Information field "Device address" displays incorrect value	Null value is assigned to the information field "Device address"	
Reading file error (see fig. 40)	File to read has incorrect structure	Information field for displaying data in tabular form is not filled.	Select another file to read
Device port error (see fig. 41)	There is no device port indicated in the window "Add a device"	Device is neither checked nor added	Indicate the device COM-port
File name error (see fig. 42)	There is no device name indicated in the window "Add a device"	Device is not added	Indicate the device name
Warning about completing data recording into file while exiting the program (see fig, 43)	Data recording into Log-file will be interrupted upon exiting the program	Displaying warning	Select the necessary solution
Reading file error (see fig. 44)	The file selected to read is opened in another program	Information field for displaying data in tabular form is not filled.	Close the file in another program or select another file to read
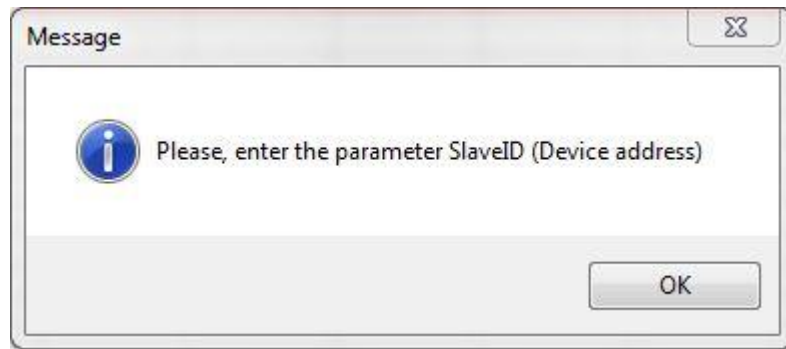
Figure 38
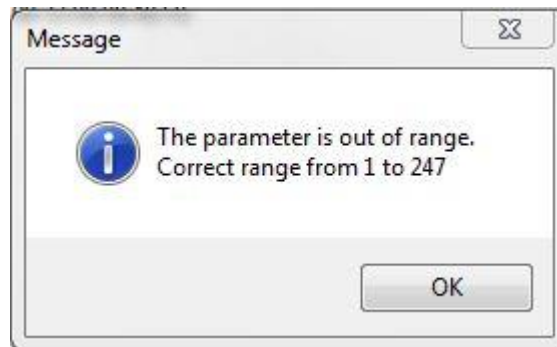
Figure 39

Figure 40
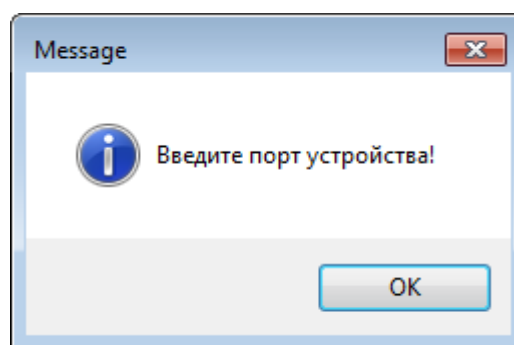
Figure 41

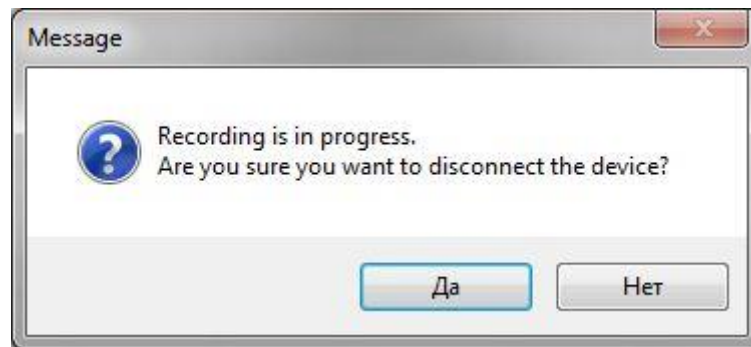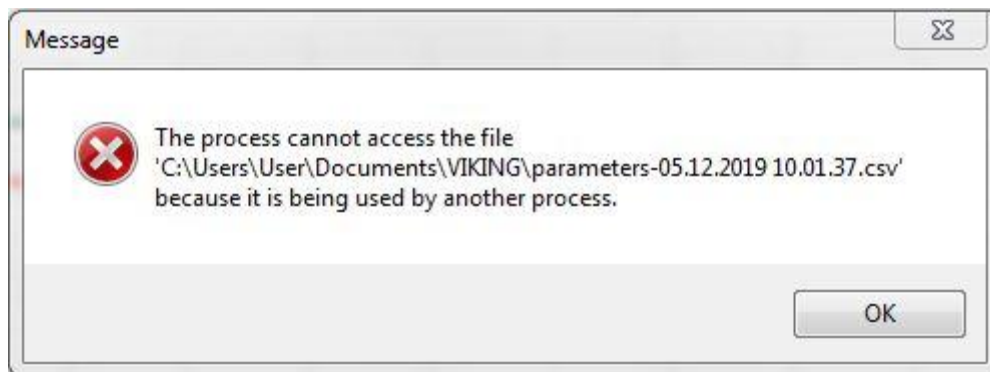Figure 42

Figure 43

Figure 44