

# Eview 2

## HART configuration software

User's manual

2<sup>nd</sup> Edition

NIVELCO



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**Thank you for choosing a NIVELCO instrument.  
We are sure that you will be satisfied throughout its use!**

## 1. INTRODUCTION

The HART ("Highway Addressable Remote Transducer") is a popular digital communication protocol designed for industrial process measurement applications. The special feature is that it uses a low-level modulation superimposed on the standard 4-20 mA current loop, which is now widely used for such measurements. Since the HART signal is small, and composed of sine waves, its average value is zero and does not significantly affect the accuracy of the analogue current signal, which can therefore still be used. This provides compatibility with existing systems, while allowing simultaneous digital communication for device configuration, status checking, diagnostics and so forth.

### The EView2 software

has been designed for detection, polling and displaying primary measurement data as well as remote programming of NIVELCO's HART-capable transmitters. The EView2 is able to handle maximum 15 units in one Node and able to handle up to 10 Nodes.

Installed in a PC the software allows the menu driven remote programming (device parameters + HART commands). The software can collect data from the detected NIVELCO units and perform cyclic polling and displaying the measurement data.

Provided functions of EView2:

- Detection of the connected devices (also in Multidrop operation mode)
- Universal HART commands – for (only) viewing of primary measurement data of non-NIVELCO field devices
- NIVELCO manufactured device specific commands:
  - Downloading parameters from field device
  - Editing, uploading parameters into the field device
  - Loading parameter list from file, saving parameter list to file
  - Downloading linearization table from field device
  - Editing, uploading linearization table into the field device
  - Loading linearization table from file, saving linearization table to file
  - Display Echo Map (for non-contact principle devices)
  - Downloading service and information parameters
  - Sensor calibration (for pH transmitters)
  - Security password (protection against unauthorized usage)

**Note!** However the Eview2 software makes setting of parameters easier in remote programming, the profound knowledge of the parameter system of the NIVELCO transmitters is indispensable.

The Eview2 software provides data logging capability for max. 3 hours.

The Eview2 software is acting as primary master on the network. While running the software, the use of an active secondary master unit (for example a hand held communicator) is strictly FORBIDDEN!

## 2. MEASUREMENT SYSTEM

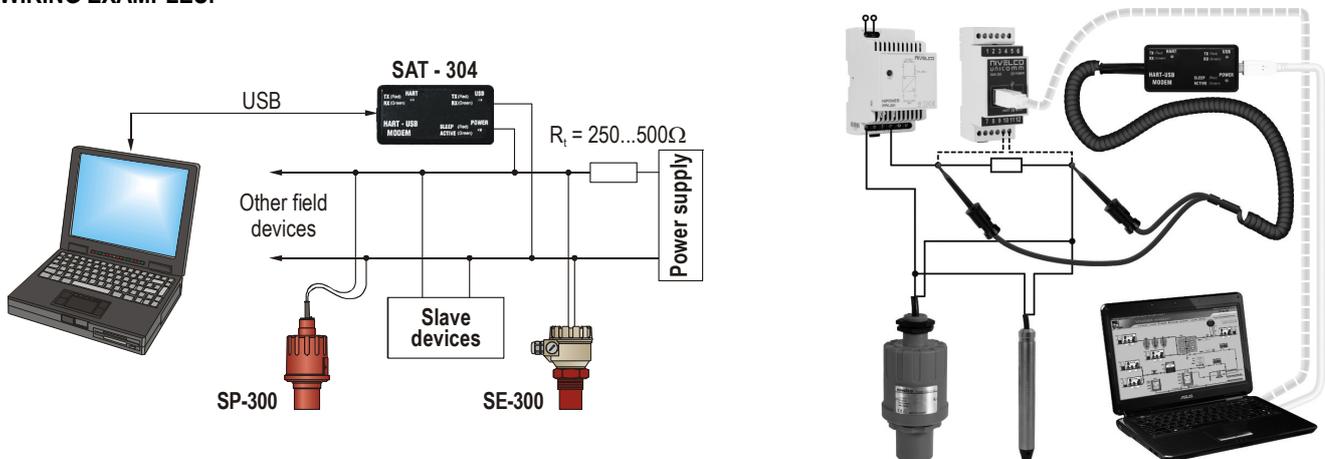
System requirements:

- Win XP, Win 7 32 or 64 bit
- HART modem (e.g.: NIVELCO's UNICOMM SAT-304 or UNICOMM SAK-305) connected to a virtual COM port

The UNICOMM HART modem establishes communication line between HART-capable field devices and process controller computer.

The UNICOMM HART modem is applicable for all HART-capable transmitters which use standard HART communication.

**WIRING EXAMPLES:**



### 3. SOFTWARE INSTALLATION

The software does not require installation, however prior to run the application we recommend installing the FTDI Driver (Virtual COM-PORT), available to download from the website of FTDI (<http://www.ftdichip.com/Drivers/VCP.htm>), or from the download section on NIVELCO's homepage.

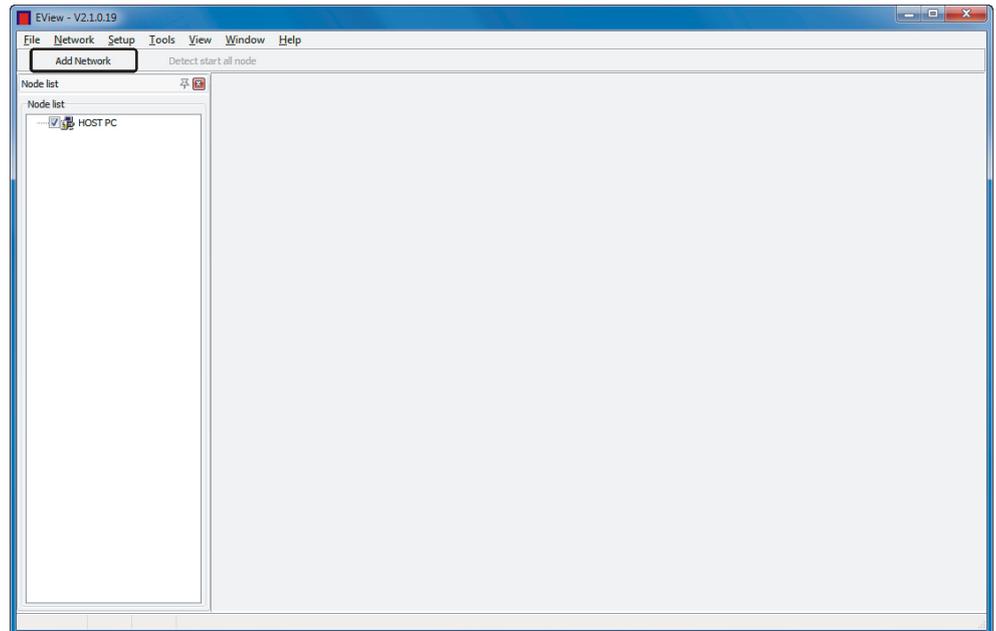
### 4. USAGE OF Eview2

#### 4.1. START EVIEW2

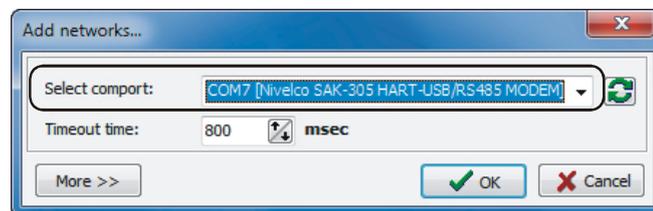
Run the application with EView2.exe file or double click on the desktop shortcut.

#### 4.2. ADD NETWORK

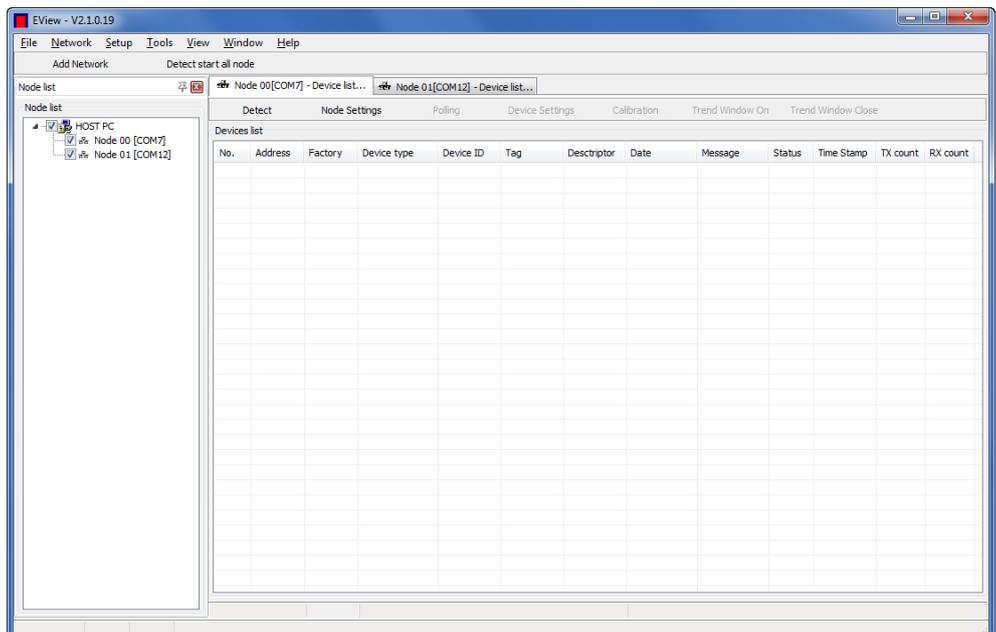
Click the **Add Network** button. (Further details are described in chapter 5.4.)



Choose the communication port.



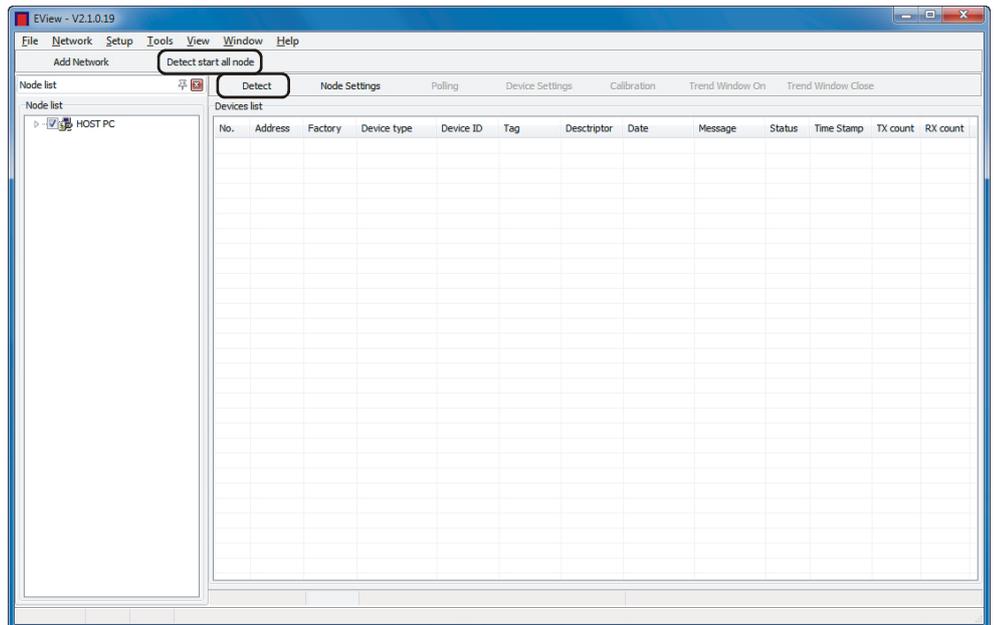
Note: The EView2 is able to handle multiple (Nodes) current loop networks (maximum up to 10). If there is more than one current loop click again on the „Add Network” button (and repeat the same procedure as before) to add further current loops to the Node list. Switching between the loops can be done with the pages on the upper bar and the networks also appear in the „Node List” window.



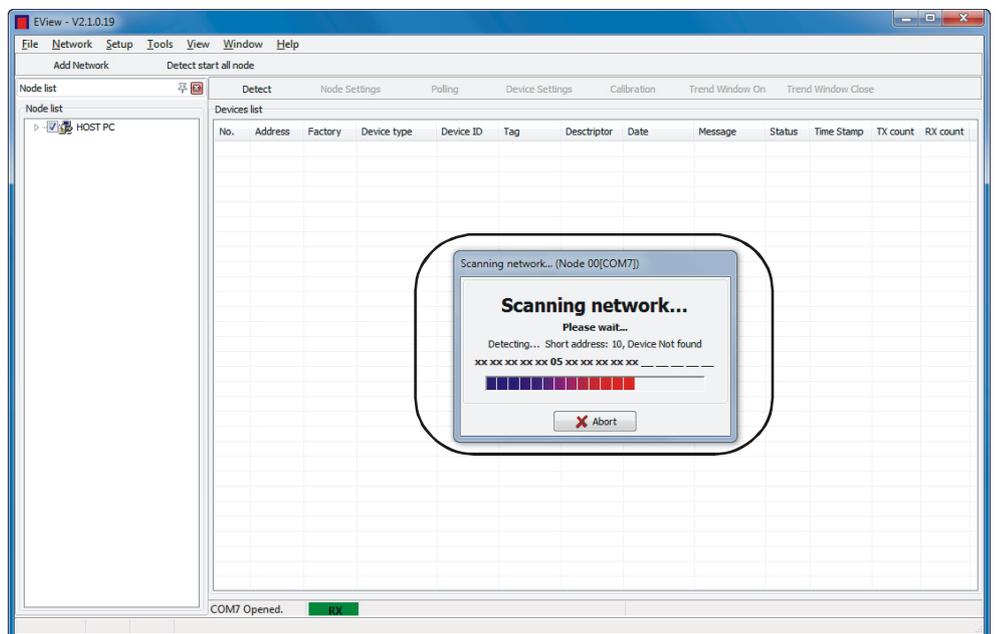
## 4.3. SCANNING DEVICES

Click the **Detect** button.

The **Detect start all node** button in the upper menu bar starts the device detection in all the connected communication ports, and the **Detect** button in the lower toolbar starts the device detection only on the selected communication port.  
(Further details are described in chapter 5.5.2.)

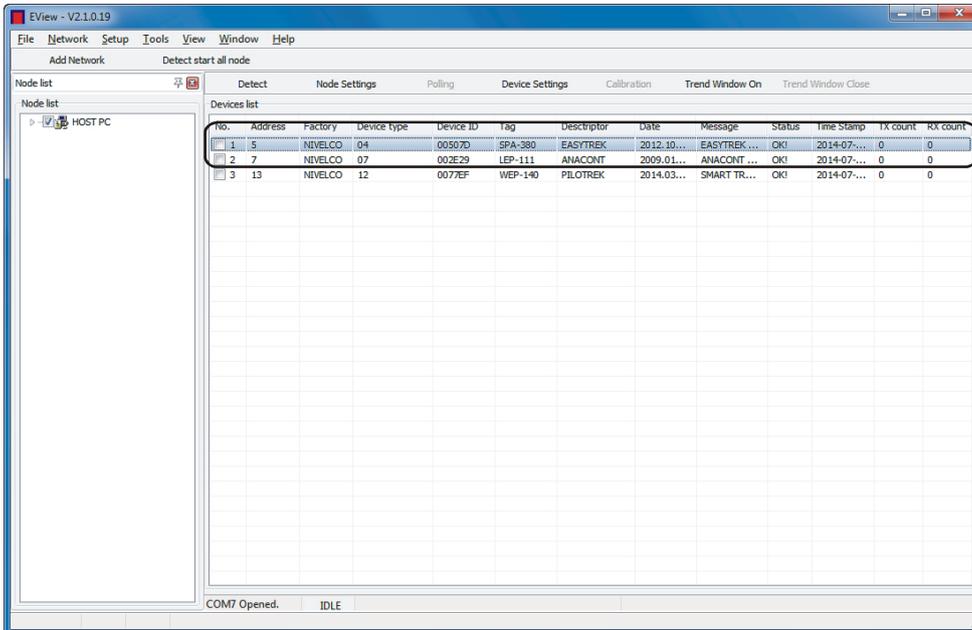
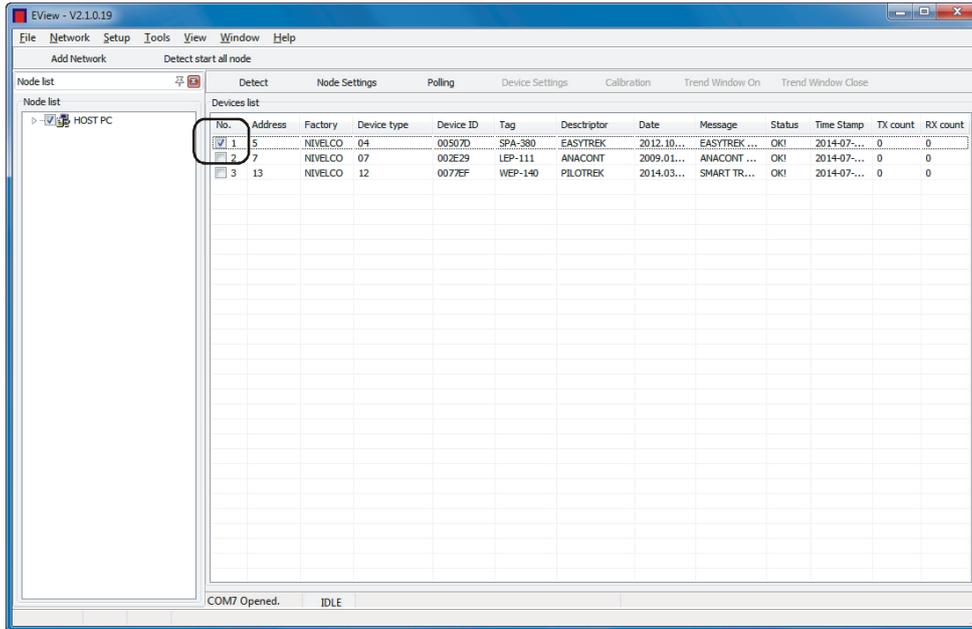


The below **Scanning network** window appears when the detection starts.



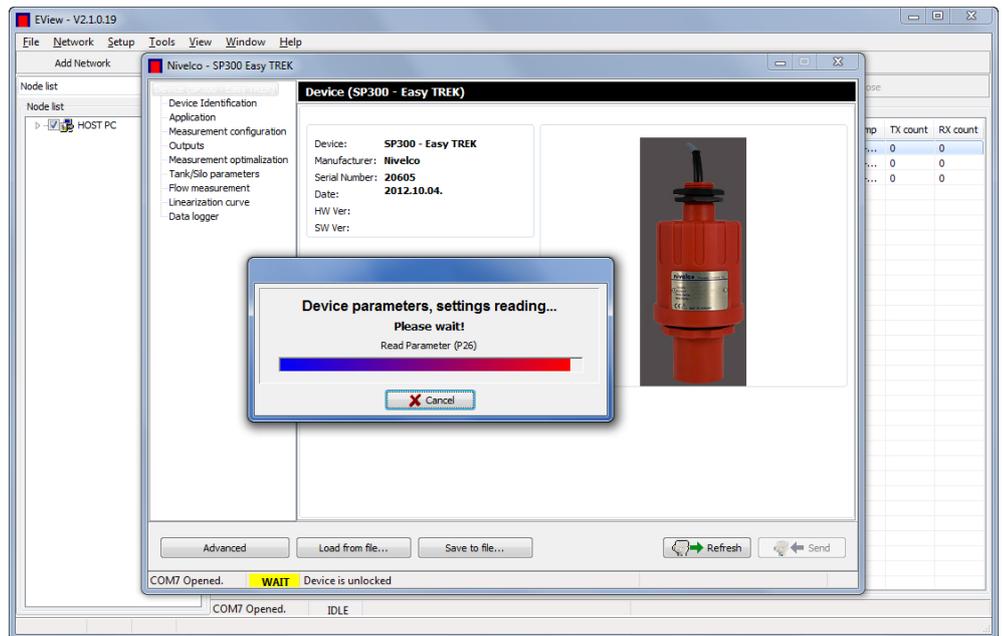
## 4.4. SELECT DEVICE(S)

To select between the detected devices tick the checkbox next to the list number or insert the line. (Further details are described in chapter 5.5.2.)



## 4.5. DEVICE SETTINGS

The software reads out all device parameters by clicking the **Device settings** button and opens the remote programming and user settings window of the selected device. The software reads out the parameter values automatically. (Further details are described in chapter 5.6.)



This window shows the device specific settings. The window consists of two main parts, on the left there is a navigation screen and on the right the modifiable settings are listed.

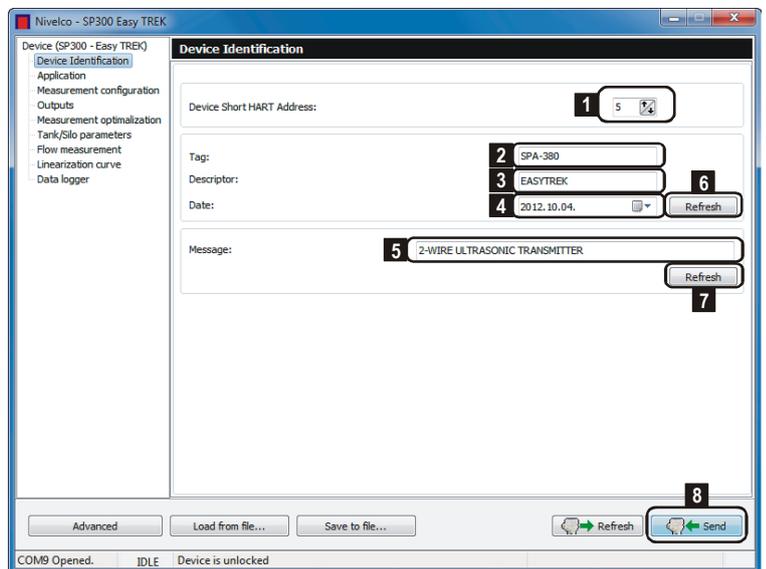
The user selectable parameters of the **Device Identification** menu are the following:

- Short (HART) address **1**
- Name tag **2**
- Descriptor **3**
- Date **4**
- Message **5**

The previous values (before the modification) can be read out by clicking the **Refresh** **6**, **7** button.

The modifications can be applied and send to the transmitter by clicking the a **Send** **8** button.

To exit from the Device settings window just simply close the window.

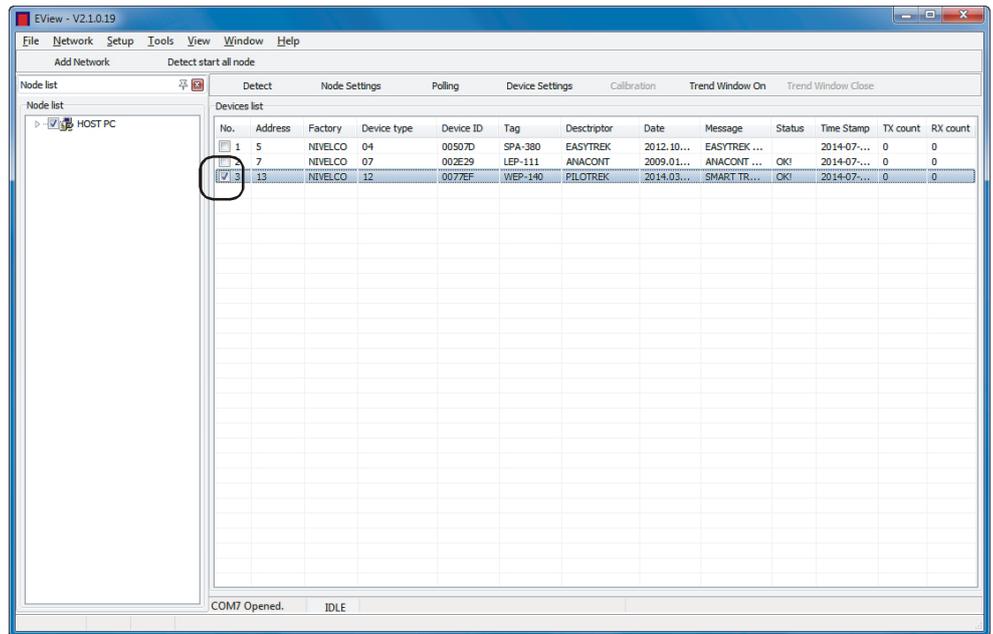


## 4.6. START MEASUREMENT

To start the measurement, tick the checkbox next to the list number of the detected device.

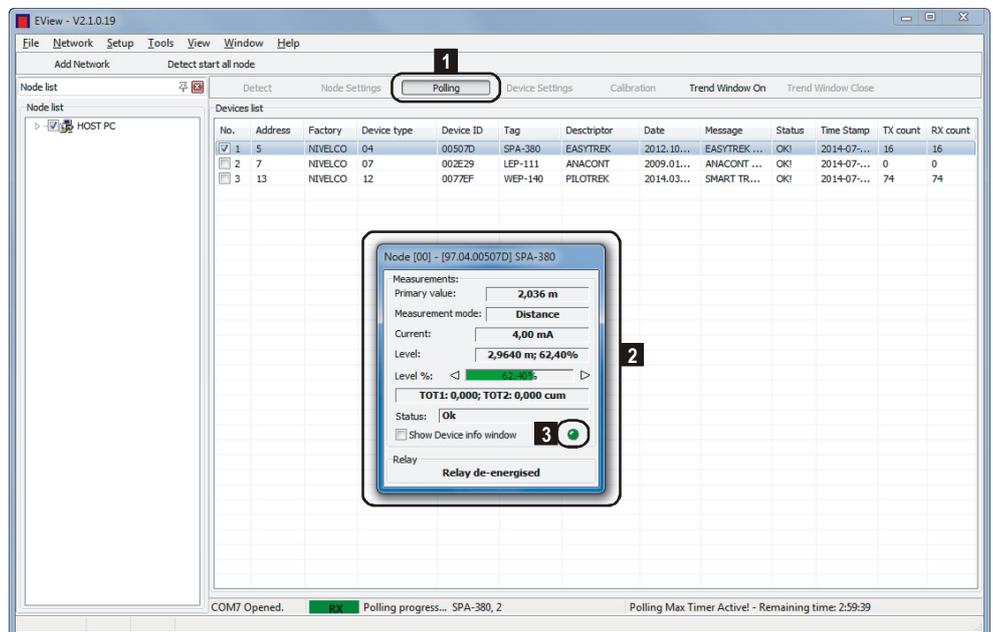
Then the inactive **Polling** button became active.

(Further details are described in the end of chapter 5.5.)



To start visualize the measurement values click **Polling** button.

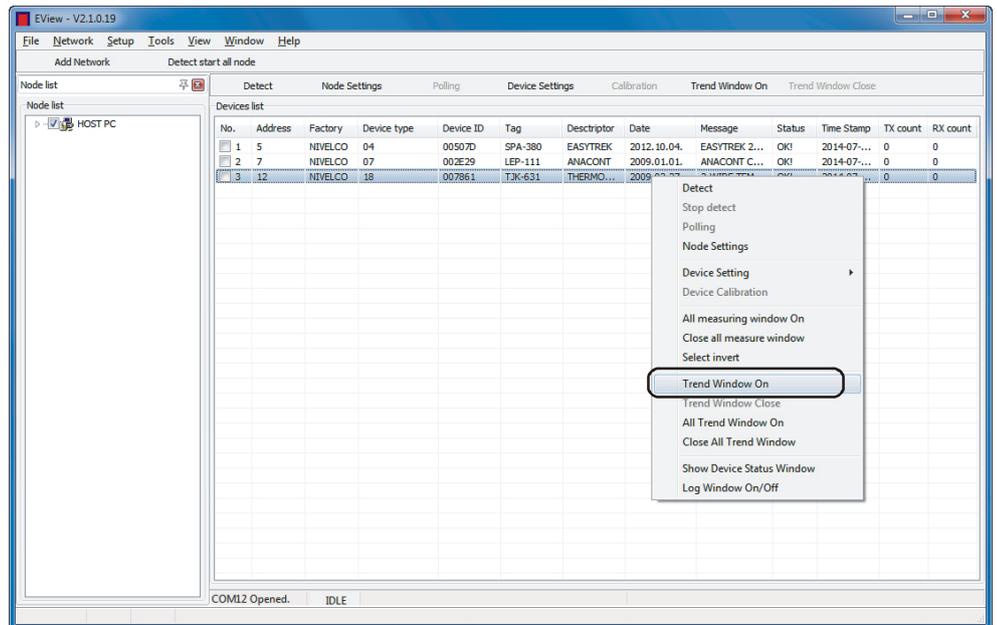
The opened small window shows cycle queried information, measured values and a Status „LED”



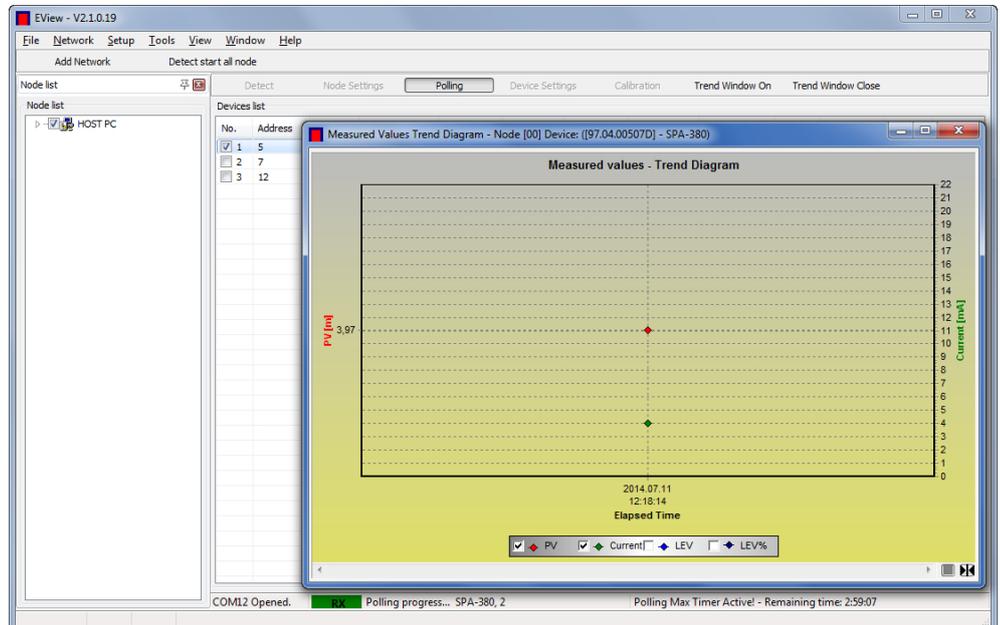
## 4.7. TREND LOGGING

Since the Polling (querying the measurement data) is started (the maximal time limit is 3 hours) then the values can be displayed on a Trend Diagram.

Click the **Trend Window On** button in the upper menu bar or in the Device list window click the right mouse button on the line of the selected device to see the popup command list menu with more functions. Choose the **Trend Window On** command from this list menu. (Further details are described in chapter 6.2.)

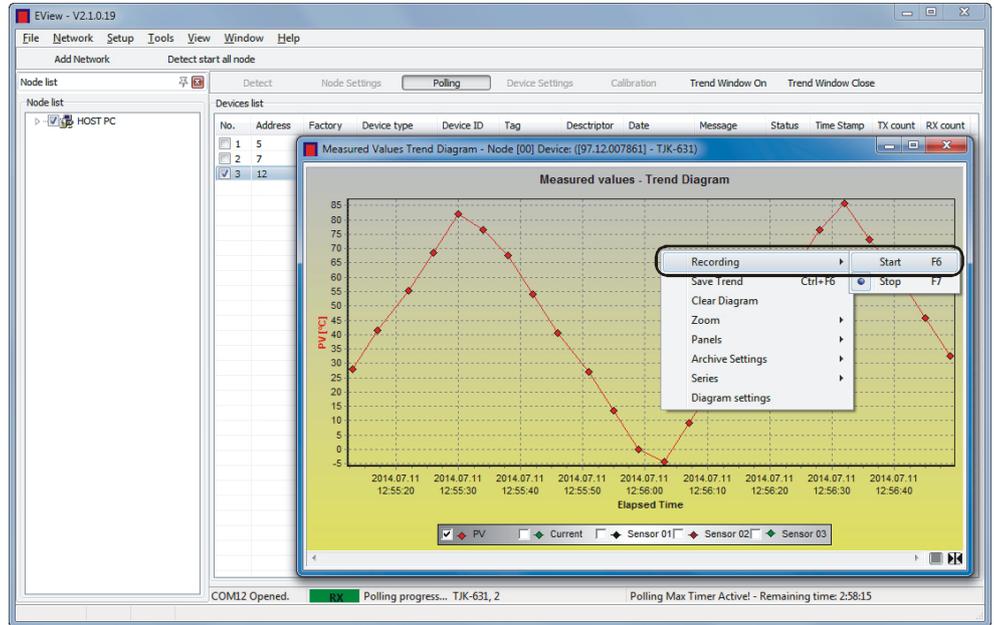


The Trend Diagram window appears.



In the Trend Diagram window the right click popup menu provides many new settings.

For example here you can find the data-logging settings or start the Recording by pressing F6 or click **Recording → Start** command in the menu. Then the recorded Trend Diagram can be saved. (Further details are described in chapter 6.2.)



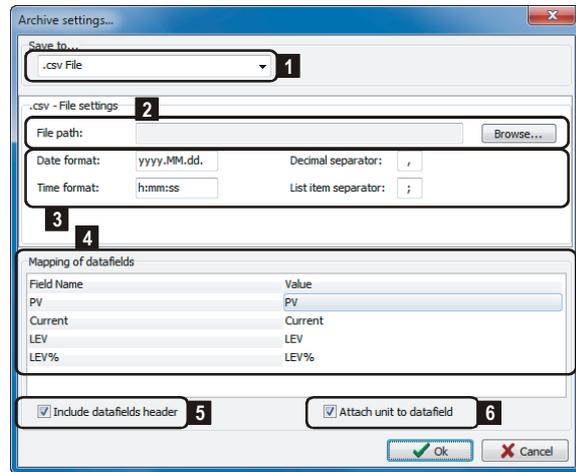
Then a new window appears where the following settings should be selected for saving into file:

- File type **1**,
- File path **2**,
- Date and time format **3**,

The header settings of the saved file can be selected:

- Name of the header datafields **4**,
- Whether include the header datafields **5**, and attach units to the datafields **6**

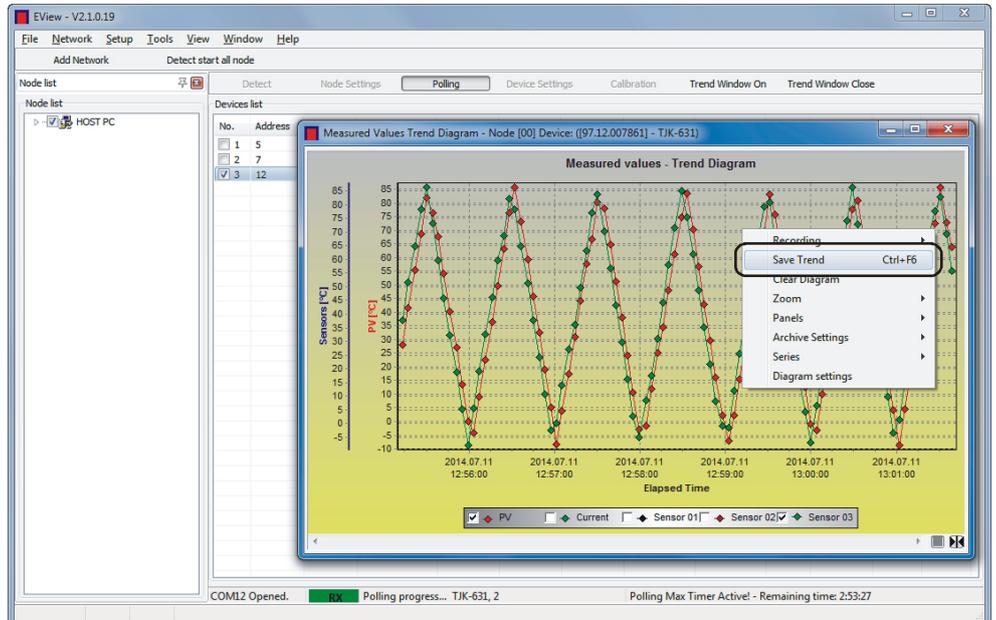
Click the **OK** button to apply the settings.



Click the **Save Trend** command (Ctrl+F6) to save the measurement data to file and also select the saving settings when the Recording is in Stop state.

This case the above setting window appears again with the same saving settings.

(Further details are described in chapter 6.2.)



## 5. DETAILED DESCRIPTION OF THE SOFTWARE

### 5.1. RUNNING THE APPLICATION

Run the application with EView2.exe file.

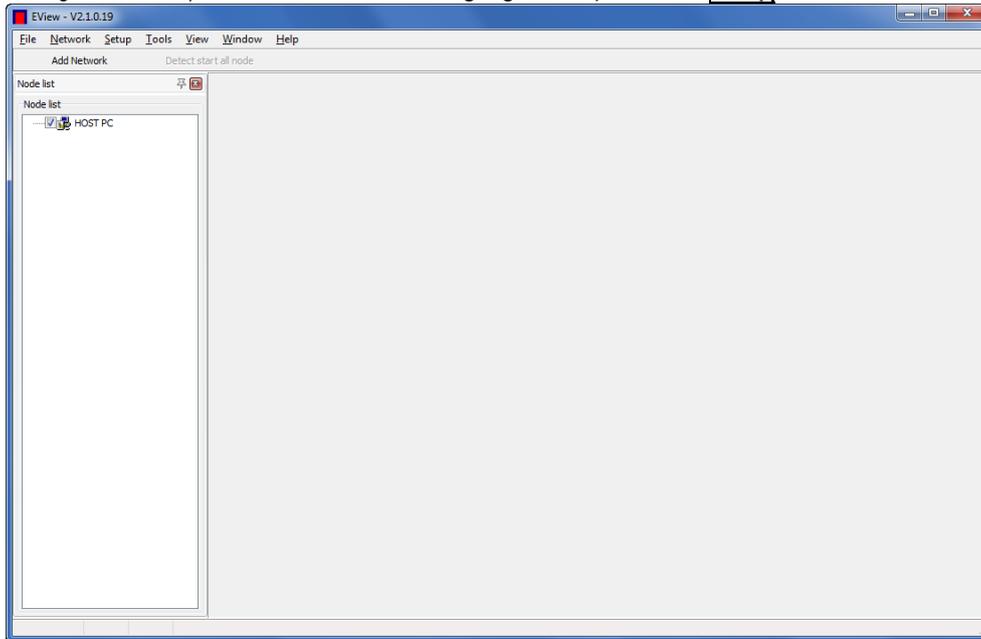
### 5.2. MAIN SCREEN

The following main screen appears as welcome screen:

The main screen contains the following elements:

- Menu bar: File, Device, Network, Setup, Tools, View, Window, Help
- Quick buttons: Add network, Detect start all node

The language (English, Hungarian, etc...) can be selected at the **Language** menu point in the **Setup** menu.



### 5.3. ELEMENTS OF THE MAIN SCREEN

In the drop-down menus of the menu bar the following functions can be reached:

#### 5.3.1. File menu

Exit from EView2 (Alt+F4).

#### 5.3.2. Network menu

From this menu **Add Network** (Ctrl + H), **Del Network** (Shift + Ctrl + D) and **Del all Network** can be selected.

#### 5.3.3. Setup

In the Setup menu the language (**English, Hungarian, etc...**) can be selected at the **Language** menu point.

#### 5.3.4. Tools

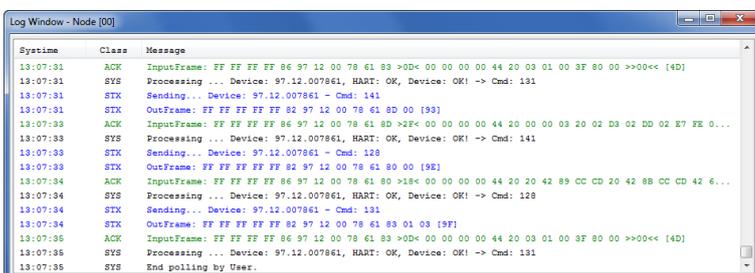
In the Tools menu there are integrated tools like the **Parameter File Editor & Viewer** and the **Record File Viewer**. (Further details are described in chapter 7.)

#### 5.3.5. View

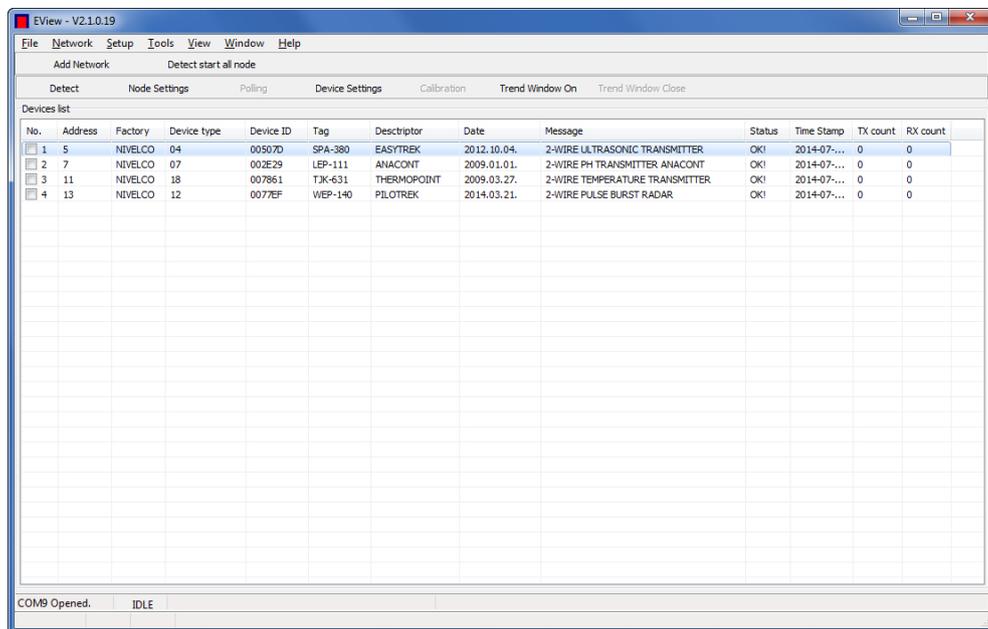
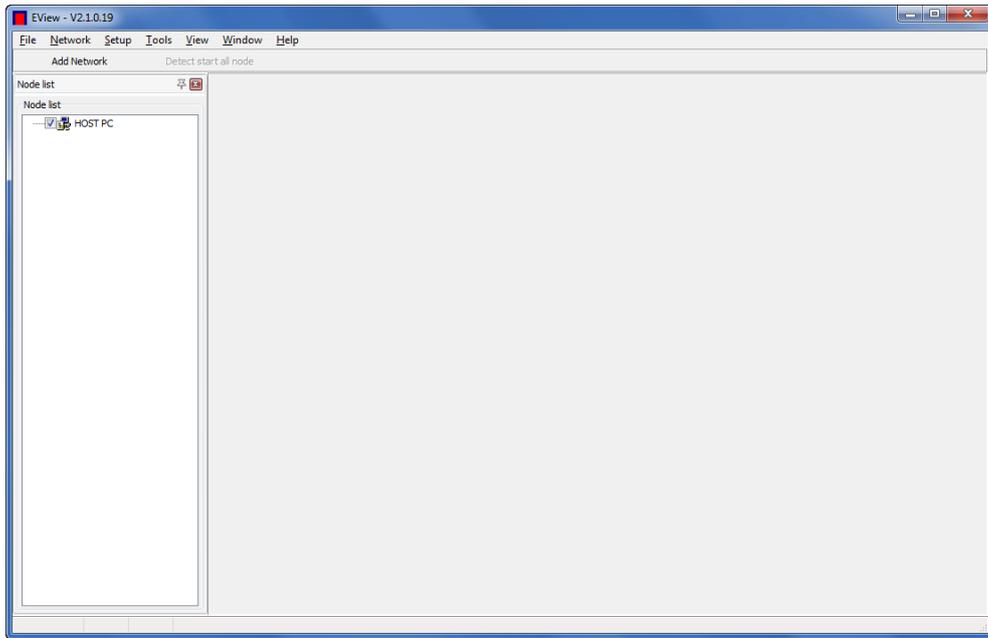
Two functions can be found here: **Node Log Window(s)** and **Project** (F3).

In the Node Log Window(s) menu point you can open the communication log for the given „Node window”. With the „Show All” / „Hide All” options all communication logs can be opened or closed with one click.

The Communication Log displays all incoming and outgoing communication messages including warning and error messages are monitored.



The **Project** menu command (F3) activates the Node list on the left side. If the tick is deactivated in the menu the Device list fills the entire place available in the window.



### 5.3.6. Window

In this menu you can select between the windows. The two options: Next window, Previous window can be used in case of multiple Nodes to scroll between the Nodes.

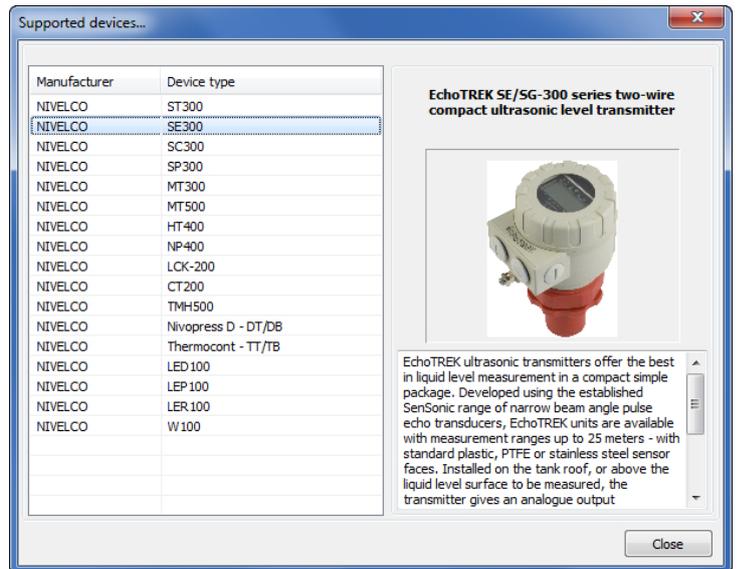
### 5.3.7. Help

The **About** window shows the general information of EView2, such as version number, registered user, date of release, contact e-mail address.



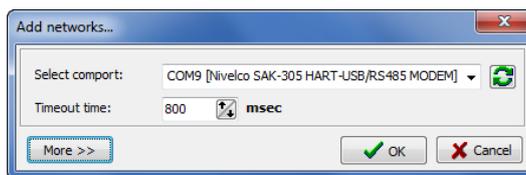
The **Device list** window lists all the supported NIVELCO transmitter devices.

On the left side there is the Device list containing the supported devices. On the right side the picture and a short description of the selected type appear.

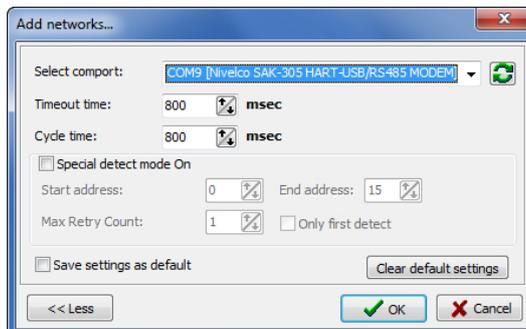


## 5.4. CONNECTION SETTINGS

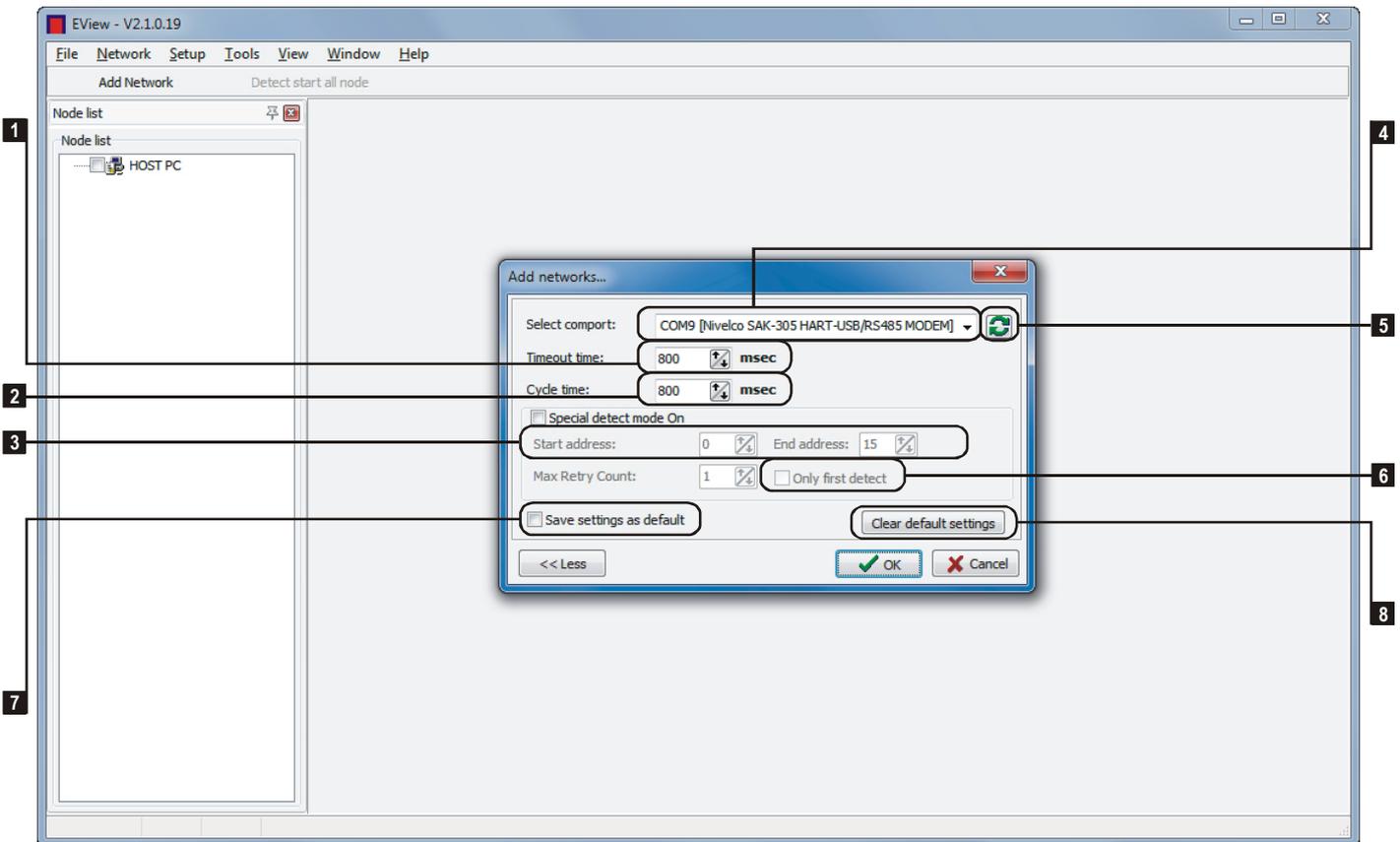
Click the **Add network** quick button to choose the communication port of the network to be added. The following window appears:



Click the **More** button to reach further settings. New settings appear in addition to the Add networks window:



Tick the **Special detect mode On** to activate the special settings of the detection mode to be modified. The special settings are described in the following figure:



**1** Timeout time is the time until the software is waiting for the answer packets.

**2** Cycle time is the time until the software is waiting for the queried information.

**3** The HART short address range can be specified for the Device Detection.

**4** Modem selection

**5** Refresh

**6** When the 'Only first detect' checkbox is ticked the Device Detection ends when the first unit is detected.

**7** Ticking the 'Save settings as default' checkbox and clicking on the OK button will save the actual network settings as default.

**8** With the 'Clear default settings' button you can delete the user-saved default setting and can reset to factory default values.

Click the **OK** button to apply the network selection. Then the device list appears and a new toolbar including the Detection button becomes available.

## 5.5. TOOLBAR

The appearing new toolbar contains the following menu points:

- Detect, Node settings, Polling, Device settings, Calibration, Trend window on, Trend window close

### 5.5.1. Device list information

- No.: List number (list numbers of the detected devices)
- Address: HART Short address („0” for single device, „1..15” for multiple devices on the HART loop)
- Factory: NIVELCO – given by HART Communication Foundation
- Device type: Type identification number of the HART capable NIVELCO transmitters, - cannot be user modified
- Device ID: The manufacturer's electronic production number, - cannot be user modified
- Tag: 8 byte device descriptor, usually order code, - can be modified by the user
- Descriptor: Max. 16 byte arbitrary comment that can be assigned to the device and is generally operation principle-related, - can be modified by the user
- Date: Can be assigned to the device (for example last modification of the Tag or Descriptor) - can be modified by the user
- Message: Max. 32 byte arbitrary comment that can be assigned to the device and is generally operation-related, - can be modified by the user
- Status: result of last programming or query data request: OK! or Error!
- Time stamp: date of last data request
- TX count: number of outgoing messages sent to a given device
- RX count: number of incoming messages received from a given device

**Note!** All data in the device list are queried from the devices.

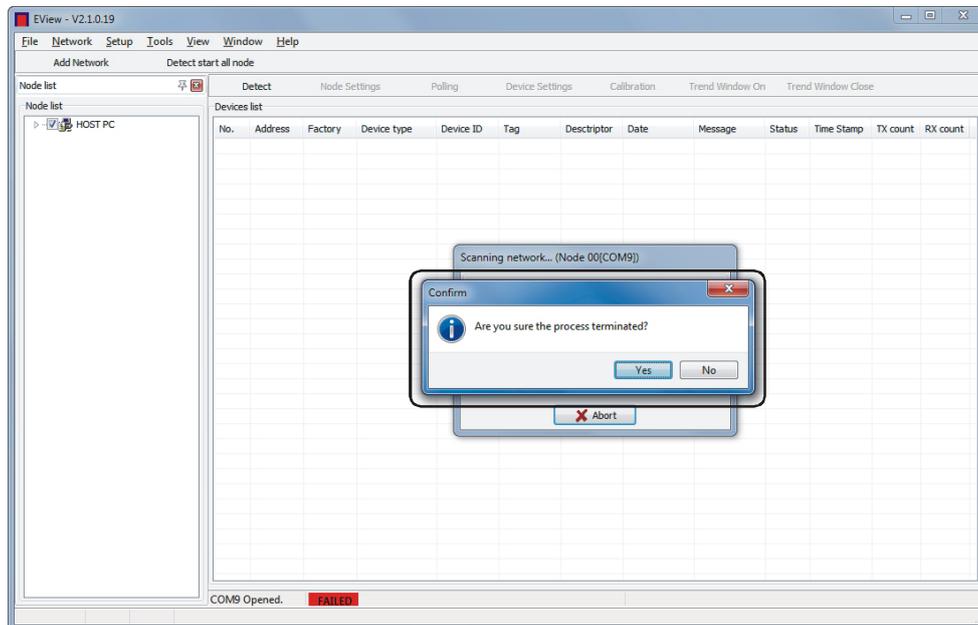
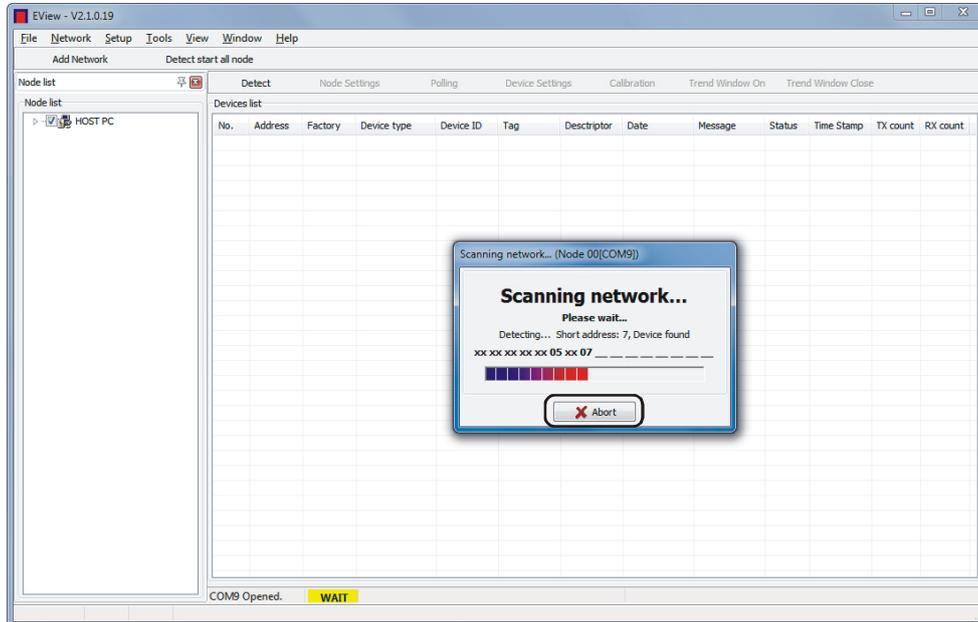
### 5.5.2. Overview on the Toolbar

With starting the **Detect** the connected devices appear in the device list.

The software queries the transmitters through the HART loop from address 0 to 15 and lists them with a list number. The software detects the devices in accordance to the „Short address” that is why two or more devices must not have the same Short address. The „Short address” and the list number are not the same. The devices receive the „Short address” by the factory calibration by the manufacturer.

The device detection procedure can be stopped or aborted by clicking the **Abort** button. Then a new window appears in order to confirm the abortion or go back to continue the detection.

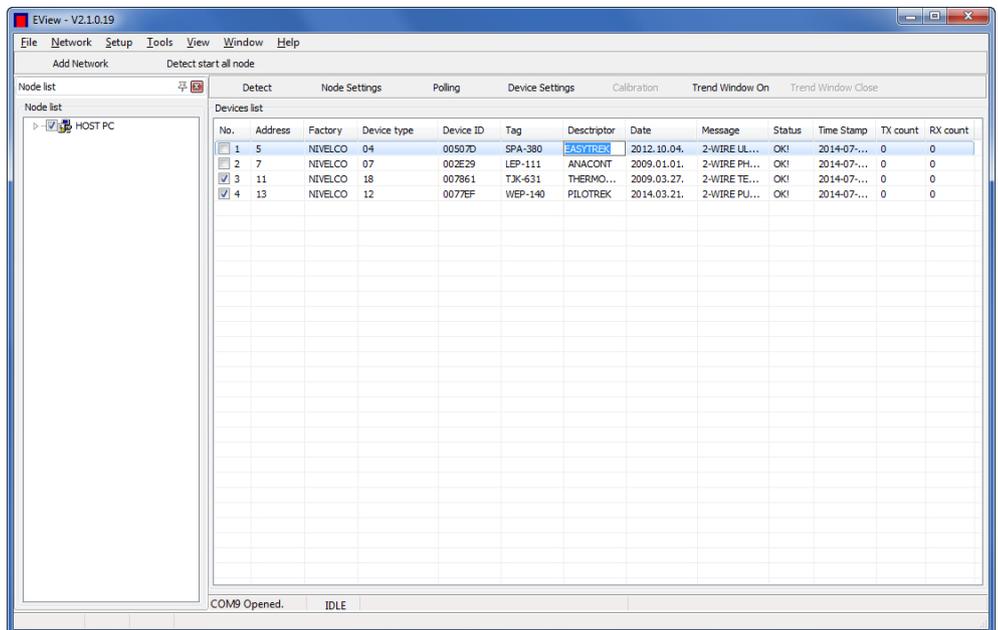
After the successfully finished device detection new command buttons became active in the toolbar (**Polling** – only if a device is selected by its checkbox next to its list number, **Device Settings** – with selecting the line of the device in the list, **Calibration** – only for pH analytical transmitters, **Trend Window On** – with selecting the line of the device in the list, **Trend Window Close** – when the trend window is opened).



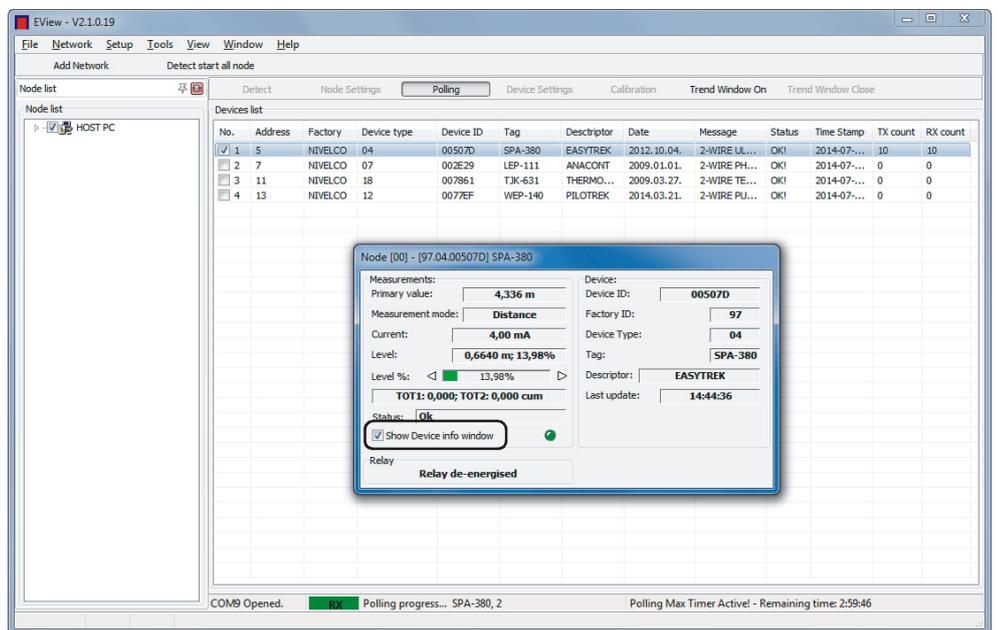
Ticking the checkbox next to the list number of the selected device and clicking the activated 'Polling' a new window appears. To select all devices in the list use the right mouse button popup menu and click the All measuring window On command.

The data fields such as 'Short address', 'Tag', 'Descriptor', 'Message', which are allowed for user modification which fields can be easily edited by double click on the device list.

**Warning!** Modifying these parameters will result immediate changes in the device after pressing the Enter button.



When the **Show device info window** checkbox is ticked at the bottom, the Polling window will be added with further identification datafields.

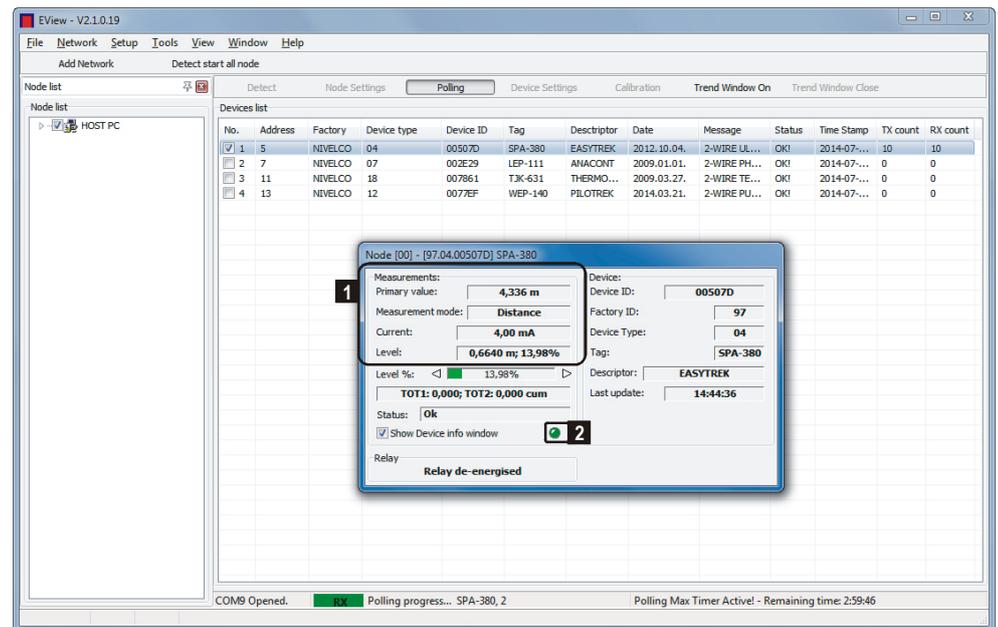


When the **Polling** button is clicked, the polling is started and the small window appears the continuous measurement data query starts. The maximum time interval of the Polling is 3 hours and the remaining time is indicated at the bottom status bar. To stop the measurement data query click again the **Polling** button.

To close the Polling window untick the checkbox of the selected device or use the right mouse button popup menu and click the **Close all measure window** command.

- Cyclically queried information,
  - Measurement values,
  - Devices specific data, further details are described in the user's and programming manuals of the selected instruments

- Status LED



## 5.6. DEVICE SETTINGS

After the successfully finished device detection all the connected devices appear in the device list. To modify device settings and perform remote programming the line of the device should be inserted.

**Opening the Device Settings window is possible only when the Polling is stopped.**

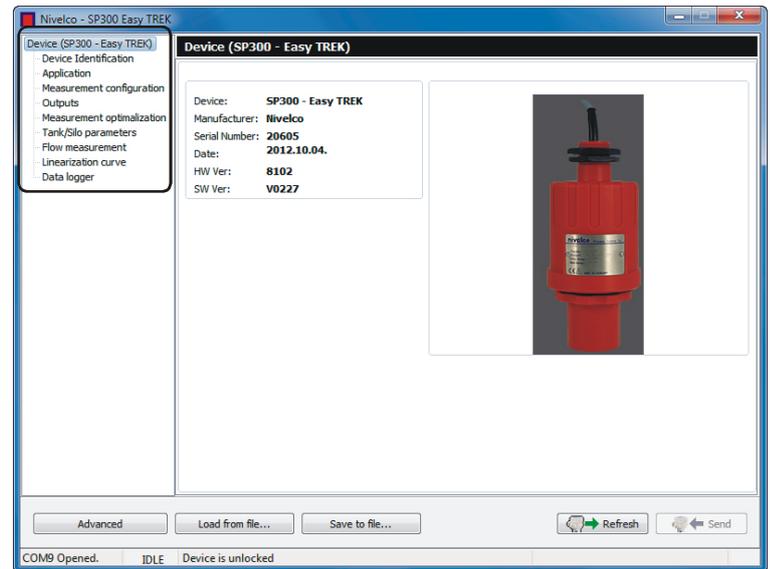
The device specific data and the detailed description of the programmable parameters of the transmitters can be found in the User's & Programming manual of the selected device. The factory default parameter values can be also found in the manuals.

By clicking the **Device settings** button a new window appears:



The device settings (specified for the given instrument) are accessible by the following tabs on the left.

If the device parameters are received from the device a new window appears containing the device settings specified for the given instrument:



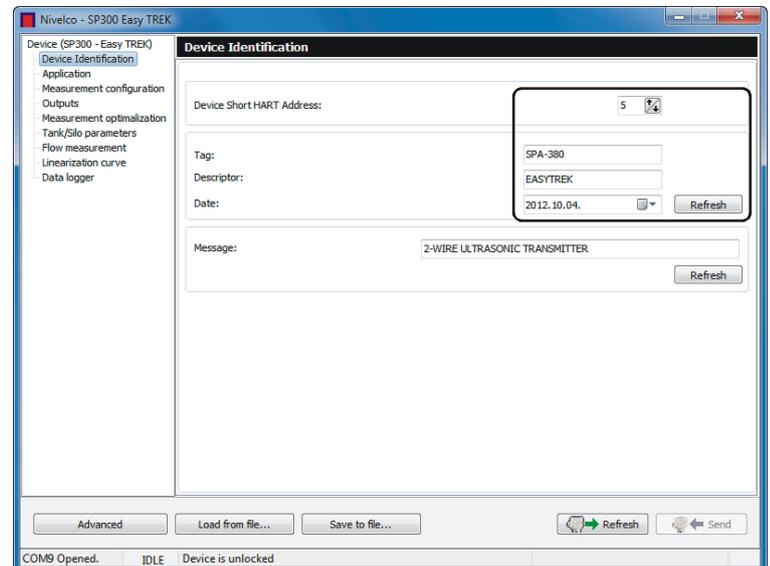
Displayed Information screen contains:

**Device:** Device name (series), Manufacturer, Serial number, Date, Hardware (HW) version, Firmware (SW) version

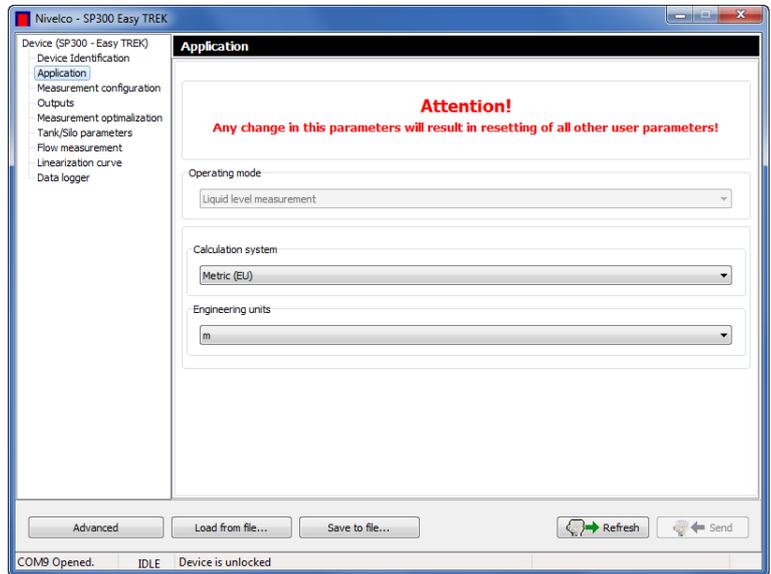
**Device Identification:** Device Short HART Address, Tag, Descriptor, Date, Message, - the last two option can be refreshed

The settings are described in details in the user's and programming manual of the given instrument.

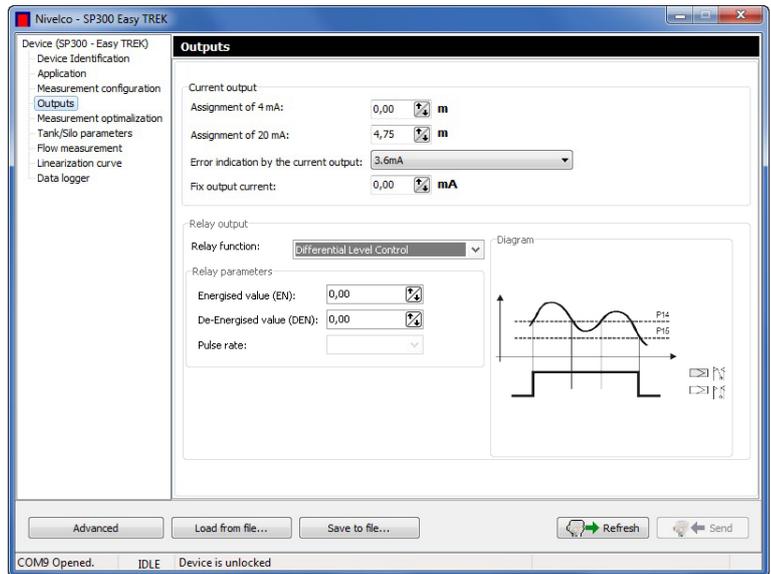
**To apply any parameter modifications click the **Send** button to send the new parameter values to the instrument.**



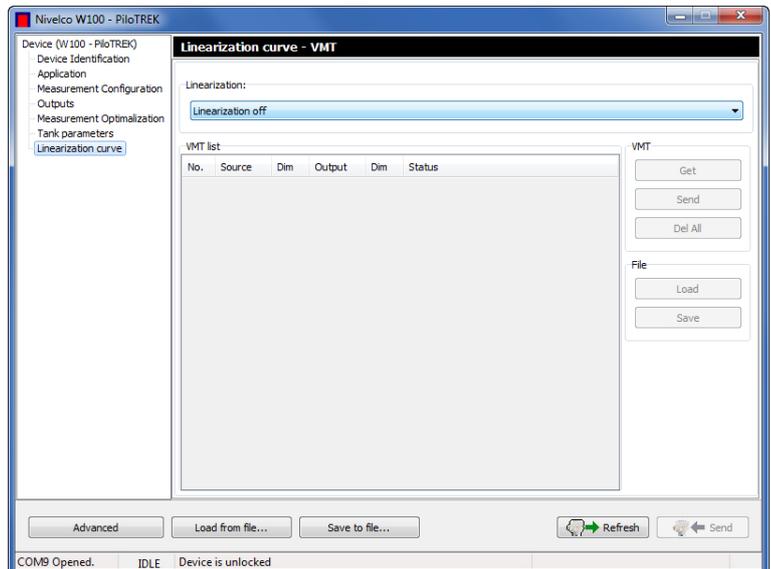
**Application:** Selecting operation mode (level measurement in liquids or in solids), Selecting engineering system (Metric - EU, Imperial - US), Selecting unit for Primary Value (mm, cm, m; in, ft)



**Outputs:** Editing current output, relay output values



**Linearization curve:** Further details are described in chapter 6.4.



Click the **Advanced** button on the bottom left corner to reach further device settings specified for the given instrument, for example: Tag and Descriptor, Sensor info, Output and PV, Calibration, Parameters, VMT, Special, Echo map.

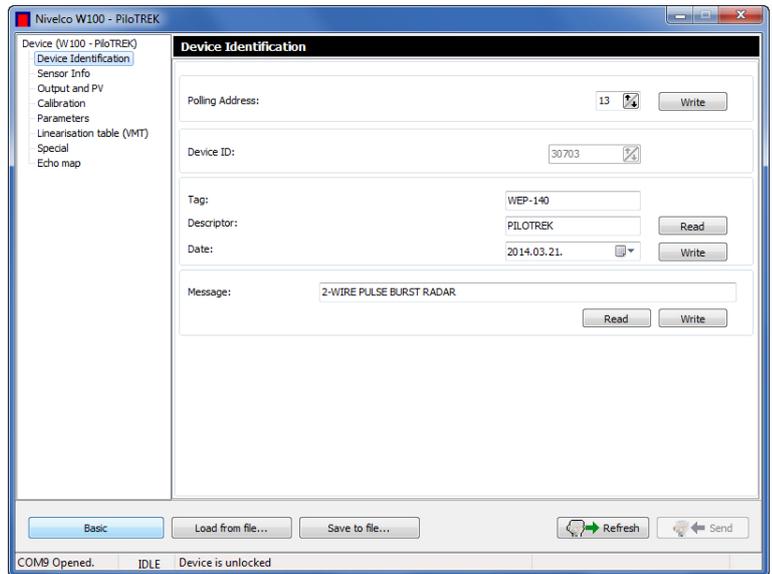
These advanced functions are **allowed to be modified only by trained personnel for own risk**, because modifications in these parameters may have serious effects on the used processes controlled by the measurement instruments.

By clicking the **Advanced** new menu points appear allowing configure additional device-specific features:

At the **Addressing** section the Polling (HART Short) address can be selected. (Further details are described in chapter 5.5 - Detection)

**Tag and Descriptor** section: The Tag, Descriptor and the Date can be read out and modified. Click the Write button to apply the changes.

**Message** section: An operation related message can be set here.



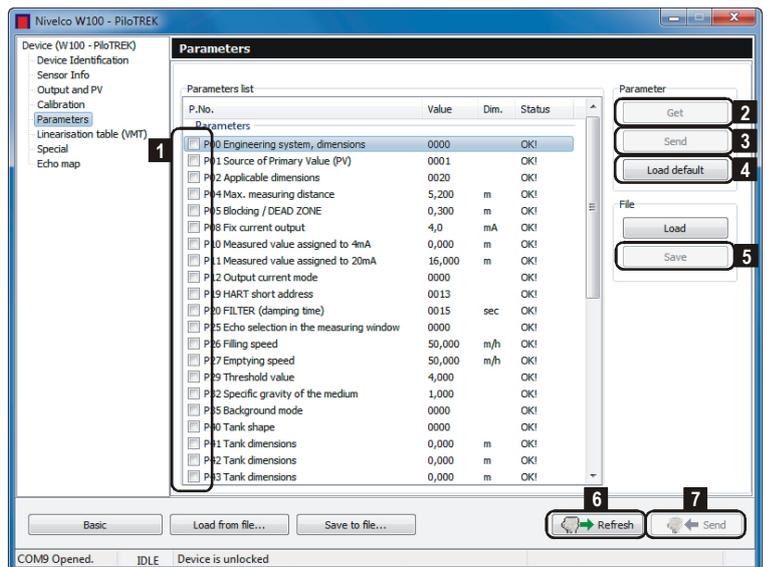
At the **Parameters** menu all user programmable device parameters are listed. Each parameter can be selected and then edited, get from the device or sent to the device, load from file and save to file.

Perform the following step to modify the device parameters:

1. Tick the checkbox of the selected Parameter **1**.
2. Click the **Get** **2** button to query to current parameter value.
3. The modified parameters can be applied and saved by clicking the **Send** **7** button, this case the parameters will be saved unless the procedure got cancelled.
4. To save all parameters to a parameter list file click the **Save** **5** button.

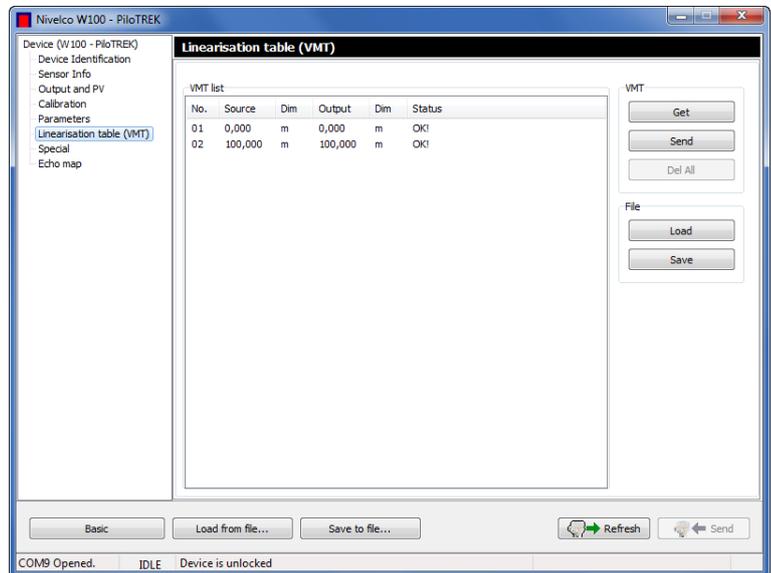
To load the factory default values click the **Load default** **4** button. Then a 'Warning' window appears in order to confirm loading the default values or cancel.

The **Refresh** **6** (Refresh) button queries again all parameters from the instrument. If any modification is made the **Send** **7** button became active and all modifications can be sent to the instrument.



By selecting any parameter with inserting the line use the right mouse button to open the popup menu for further commands: Select all, Deselect all, Select invert, Only select the parameters, Only select the info parameters, Edit parameters, Set to default value, Set to last value.

VMT (Further details are described in chapter 6.4)



**Echo map** is a device specific (for non-contact principle) function. By clicking the **Get** button the following echo data will be displayed: List number of the echoes, Distance, Amplitude in dB, Status.

By clicking the **Show Diagram** button an Echo Map appears displaying the place of the received echo in the distant axis. The screen can be zoomed in and out and can be scrolled with the scrollbar tool at the bottom.

**Warning! Please note that the echo diagram does not show the real echo map, but only gives visual equivalent to the data in the echo table!**

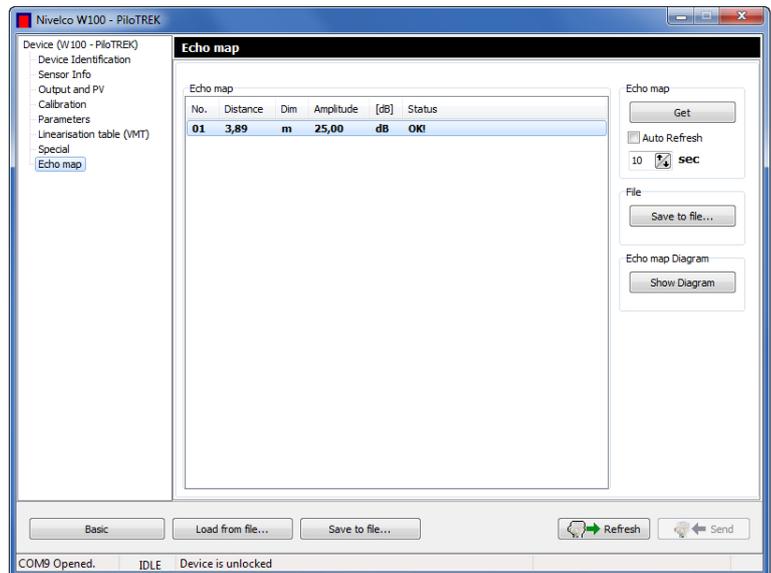
When ticking the 'Auto Refresh' checkbox under the Get button and click the **Get** button a continuous cyclic Echo map querying will start with the selected cycle time. The cyclic querying can be stopped by clicking Cancel, or stops automatically if you leave the Echo Map window or close the Device Settings window between two cycles.

With inserting the line of the received echo use the right mouse button to open the popup menu list with the following commands: Get, Auto refresh, Show Diagram, Save to file

By clicking the **Save to file..** button the Echo Map can be saved to an Echo Map file in 'csv' format.

To leave the Advanced menu and go back to the Basic settings click the **Basic** button.

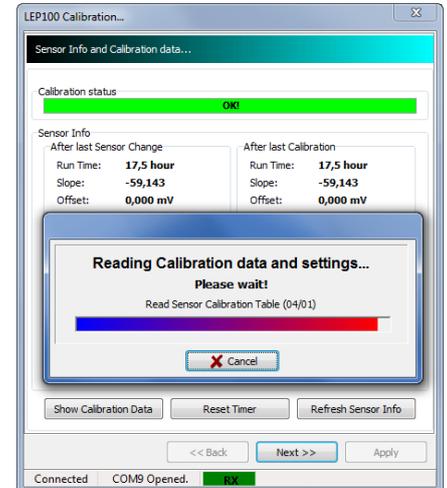
To go back to the Device list simply close the window (Alt+F4).



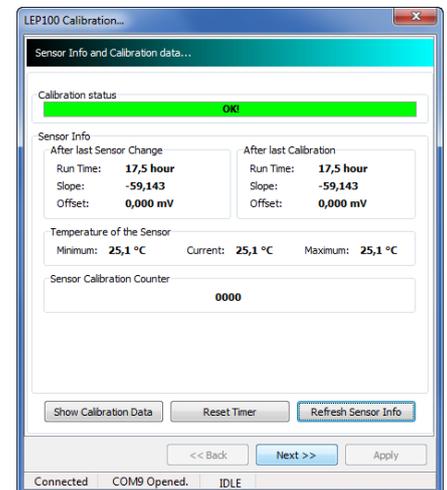
## 5.7. REMOTE CALIBRATION

The liquid analytical transmitters - using measurement electrodes - such as the AnaCONT LEP-100 series pH transmitters need to be recalibrated (its accuracy needs to be checked) between certain time intervals depending on the application utilizations in order to maintain the reliable measurement. The calibration intervals may vary from few days to several weeks. The measurement electrodes are aging during the usage of the instrument. When the life-time of the sensor is over the sensor should be replaced. In case of sensor replacement the sensor should be calibrated. This sensor calibration is aided with EView2 **Calibration** feature.

The Calibration button is active only for the instruments which are able to perform remote calibration. By clicking the Calibration button or selecting the 'Device Calibration' command in the right click popup menu the device-specific Sensor Calibration window appear:



Along with opening the Sensor Calibration window the software automatically queries the calibration data and settings from the transmitter. By cancelling the parameter reading process you will exit from the Calibration window. After successfully reading the required data the device / sensor information is displayed.

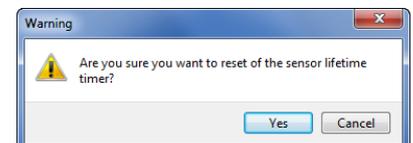


In the top line there is the calibration status.

Below the Sensor Info part contains: Run time, Slope and Offset values for the 'After last Sensor Change' and the 'After last Calibration' time periods.

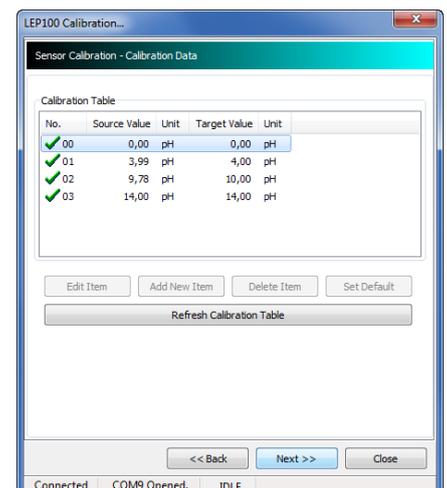
The 'Temperature of the Sensor' indicates the minimum, the current and the maximal temperature values of the sensor. By clicking the 'Refresh Sensor Info' button the sensor data can be read out anytime. The 'Sensor Calibration Counter' indicated the number of the calibrations performed with the given sensor.

By clicking the 'Reset Timer' button the sensor lifetime timer (run time after last calibration) can be reset after confirming the Warning window.

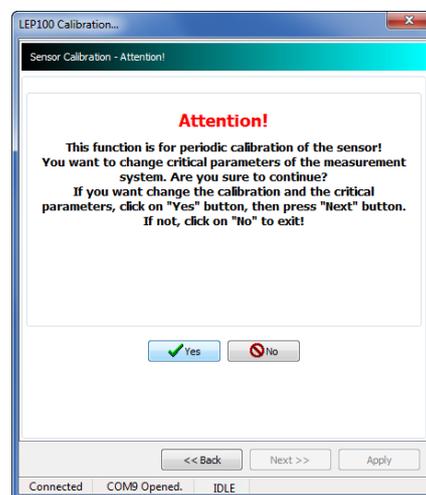


By clicking the 'Show Calibration Data' button the already queried calibration data is displayed in the 'Calibration Table'.

By clicking the 'Refresh Calibration Table' button in the Calibration Table window the calibration data can be queried again. By clicking the '<< Back' button you can go back to the previous window, by clicking the 'Next >>' button you can start the calibration procedure.



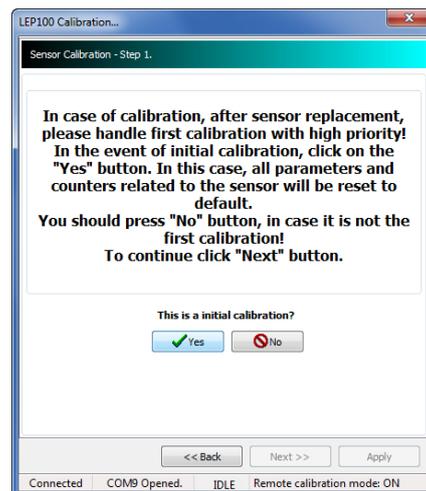
The appearing window displays a warning message that the user is about to change critical parameters of the measurement system. The 'No' button results immediate **exiting** from the calibration procedure. By clicking the 'Yes' button the software will **entering the remote calibration mode of the device**. After this step we can go on to the next window (Sensor Calibration - Step 1) by clicking the Next >> button.



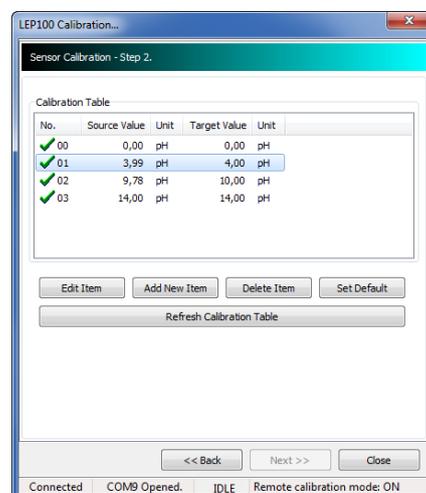
Upon that the calibration is an initial calibration or a periodic one, choose 'Yes' or 'No' to activate the Next >> button. To continue the calibration procedure click the Next >> button.

By clicking the << Back button we can go back to the previous window.

By clicking the Next >> button we can enter the Calibration Table (Sensor Calibration - Step 2):

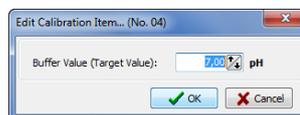


The Calibration Table window displays the pH values which are already calibrated. The calibration procedure is basically is done by editing the elements of this calibration table or adding new calibration points in accordance to the Sensor calibration chapter of the User's and programming manual.



In case of pH transmitter:

By clicking the 'Edit' button the already existing calibration point can be modified, by clicking the 'Add New Item' button new calibration points can be added a to the calibration table (up to maximum 8 elements).



the 'Edit' and the 'Add New Item' button opens a new window where the desired calibration values can be modified or entered.

By clicking the 'Delete Item' button an already existing selected calibration point can be cleared form the calibration table.

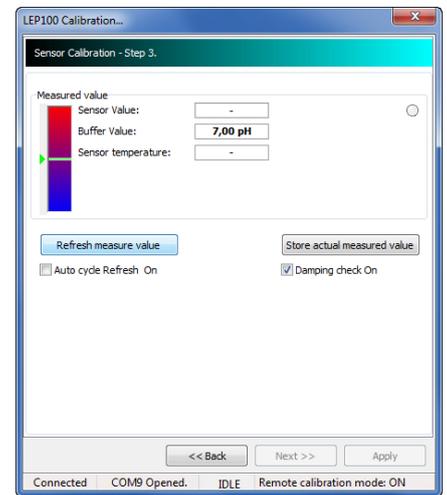
By clicking the 'Set Default' button the factory default values can be restored.

By clicking the 'Refresh Calibration Table' button the calibration data can be queried again.

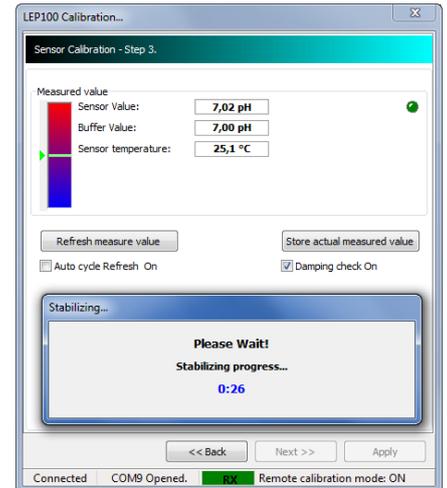
If the calibration values in the table are suitable for the measurement application and it is successfully saved to the instrument (it is indicated with the green tick before the list number) the calibration procedure can be finished with the 'Close' button.

By clicking the 'OK' button on the 'Edit / Add New Calibration Item' window the following window appears (Sensor Calibration - Step 3):

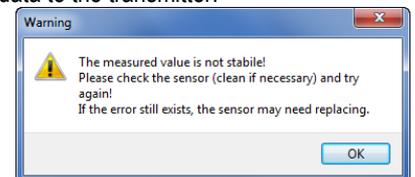
Here the Sensor Value, the Buffer Value and the Sensor temperature is displayed. The measured (Sensor) value can be refreshed by clicking the 'Refresh measure value' button. If the 'Auto cycle Refresh On' checkbox is ticked under the button and then click the 'Refresh measure value' button the software will cyclically query the measurement value until the cyclic measurement data query is stopped by clicking again the 'Refresh measure value' button.



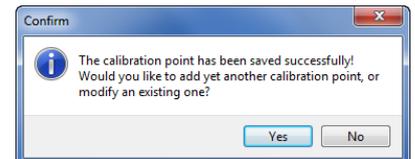
To store the desired calibration point to the calibration table click the 'Store actual measure value' button. If the Damping check On checkbox is ticked (the default state is ticked) prior to storing the calibration point a stabilizing progress starts. The trend bar indicates that the measurement value is stable enough for the storing. (If the tick is removed from Damping check On checkbox the software tries to store the actual calibration point, but ignores if the measured value is not stabilized.)



During the stabilizing progress the software queries the measurement value repeatedly and when the measurement value is stabilized (in accordance to the entered buffer value) within the given time period the software send the calibration data to the transmitter. A Warning message appears if the measurement value is not stabilized between the given time period. This case the calibration point will not be saved.



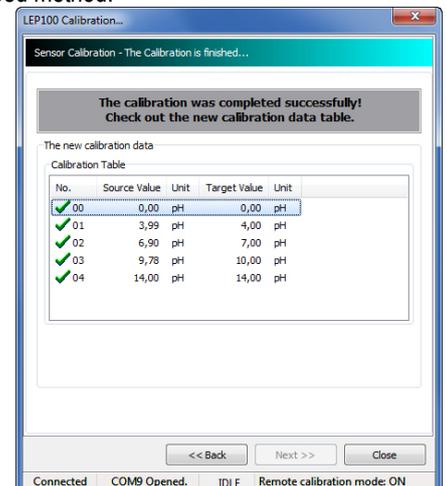
In case of successful sensor calibration a Confirm window appears informing about that the calibration point has been saved successfully:



Along with the Confirmation about the successful saving of the calibration point there is a question to be answered whether there are more calibration points to be added to the calibration table or modifying any existing items. If the answer is 'Yes' then the Sensor Calibration - Step 2 window appears where the editing or the adding can be performed according to the previously described method.

If the 'No' option is chosen then a summary window appears containing the refreshed calibration table including the edited or newly added item. This window means that the calibration procedure was completed successfully.

If any calibration item requires further modification click on the '<<Back' button to go back to the Sensor Calibration - Step 2 window. If everything is OK with the calibration table click on the 'Close' button to exit from the calibration mode.

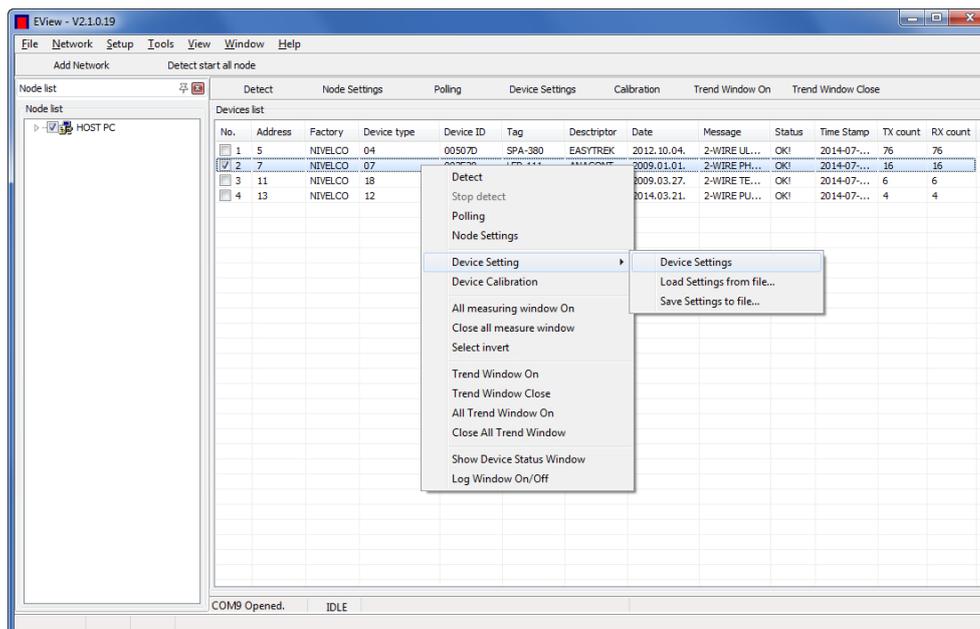


## 6. THE POP UP MENU

### 6.1. ELEMENTS OF THE POPUP MENU

Many commands are available in the right mouse button popup menu, however some of them are only available after the successful device detection. The elements of the right mouse button popup menu are the following:

- Detect
- Stop detect
- Polling on/off
- Node settings
- Device settings
- Device calibration
- All measuring window on
- Close all measuring window
- Select invert
- Trend window on
- Trend window close
- All Trend window on
- Close all Trend window
- Show Device Status Window
- Log window On/Off



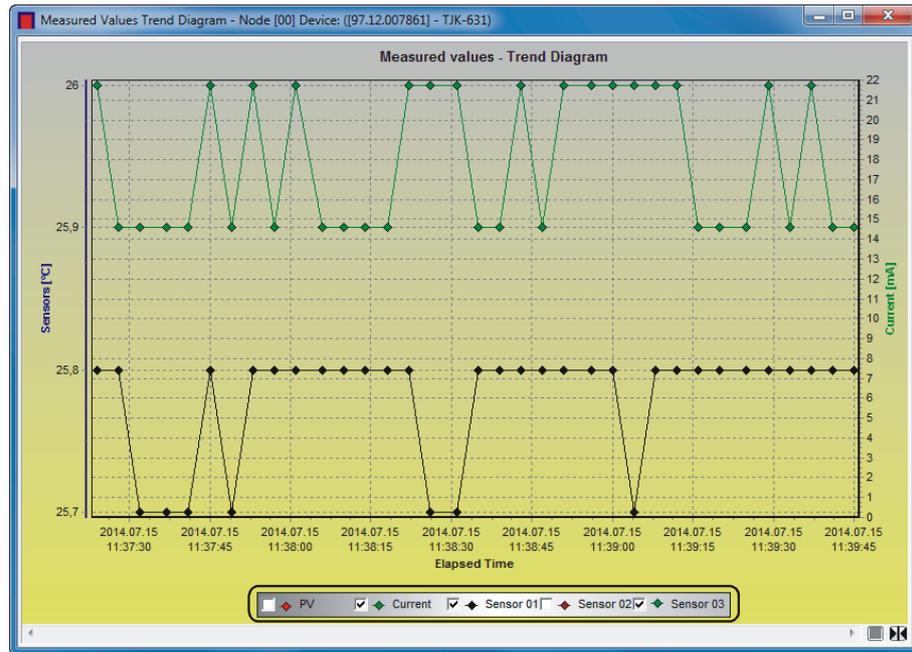
The commands of the popup menu such as Detect, Stop detect, Polling On/Off, and the Node settings has exactly the same function as the equivalent quick buttons in the menu bar.

The **All measuring window On** command selects all detected devices in the device list by ticking the checkboxes. Then the **Polling** command (or button) will open all measuring windows and start the query of all measurement data.

The multiple measurement windows can be closed by one click with the **All measuring window close** command.

## 6.2. TREND DIAGRAM

When the Polling is running the Trend Diagram function becomes available to open:



The selected measurement value is displayed, marked with the checkbox

At the bottom section the measured value to be displayed can be selected: Primary Value, Current value, Lev, Lev%. Of course the displayable measurement values are in accordance to the selected instrument. Since the running Polling function is needed for the operation of the Trend Diagram, the maximal time interval is also 3 hours.

The right mouse button popup menu provides further commands to use: Recording, Save Trend, Clear diagram, Zoom, Panels, Archive settings, Series, Diagram settings. The drop-down popup menu has many elements with multiple sub-menus.

In the **Recording** drop-down menu Start and Stop commands can be selected. Both Start and Stop functions are available with F6 / F7 keyboard quick buttons.

By clicking the **Start** button a new window appears with the file saving settings.

Field Name	Value
PV	PV
Current	Current
Sensor 01	Sensor 01
Sensor 02	Sensor 02
Sensor 03	Sensor 03

In the Archive settings window the File type, Folder path, Date & Time format, Header options can be set. When clicking the **Stop** command the saving into file will be stopped. If we want to continue to saving, click again the **Start** command to continue the saving into the previously selected file. If we want to use a new file for saving use the right mouse button popup menu and select the **Archive settings** menu and then click the **Settings** command to open the above described Archive settings window. After filling the required settings click the **OK** button to start saving into the new file.

If the Saving into file was running and then the saving has been stopped and after this the Saving settings (file destination) have been changed, this case when clicking the **OK** button only the file path is changed and for continue the saving into file process the Recording should be Started again.

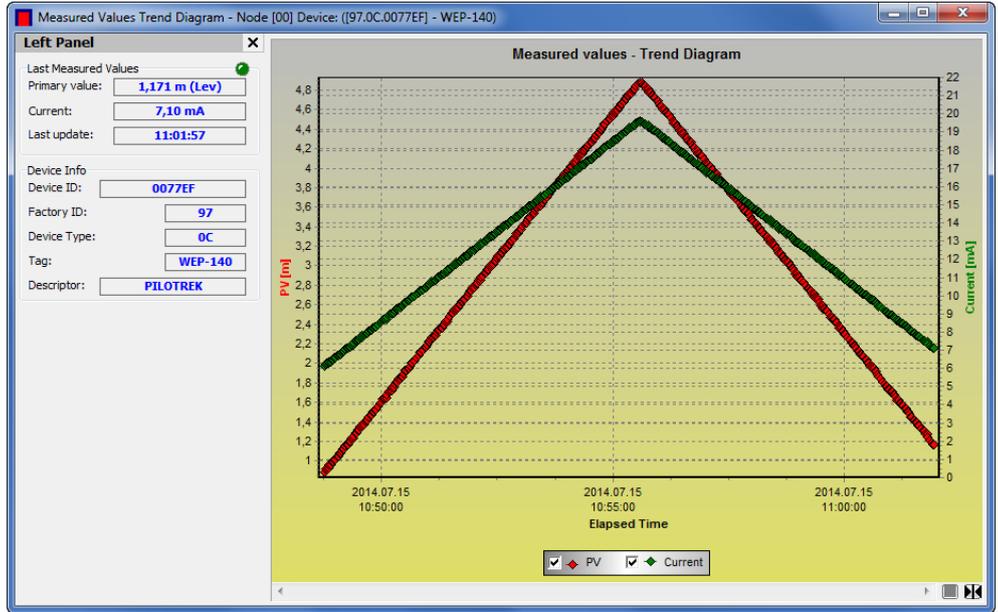
The **Save Trend** command (or button in the Right panel) opens the above described Archive settings window if the saving path was not set previously. The **Save Trend** command is counted from the first moment (when the Polling was started) and takes only until the moment of clicking the Save trend command or the OK button of the Archive settings window.

Click the **Clear diagram** command to clear the previously made Trend diagram. This function has no effect on the saved trend diagram files.

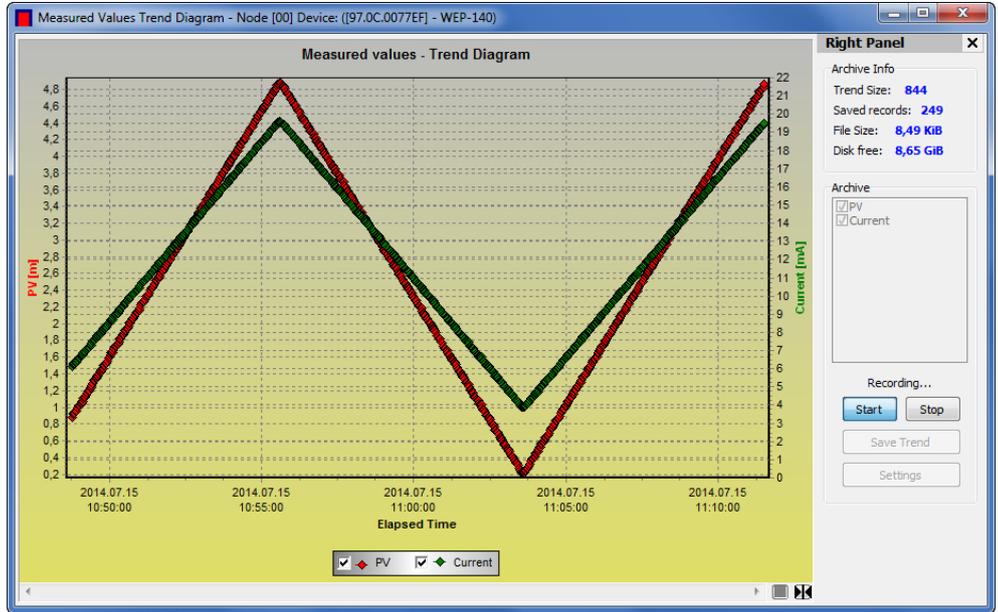
In the **Zoom** menu there are many possible options for customizing the diagram: **Zoom+**, **Zoom-**, **Reset Zoom**.

The **Panel** menu has multiple drop-down menus: Left Panel, Right Panel, Bottom panel, Buttons panel, All Panels On/Off. All menu points have other sub-menus allowing further setting possibilities.

The **Left Panel** which is a toolbar panel on the left side includes the measurement values and the device info screen of the Polling window. The Left Panel can be customized by the right click popup menu with turning on or off the 'Show Measured Value' and the 'Show device info' options.

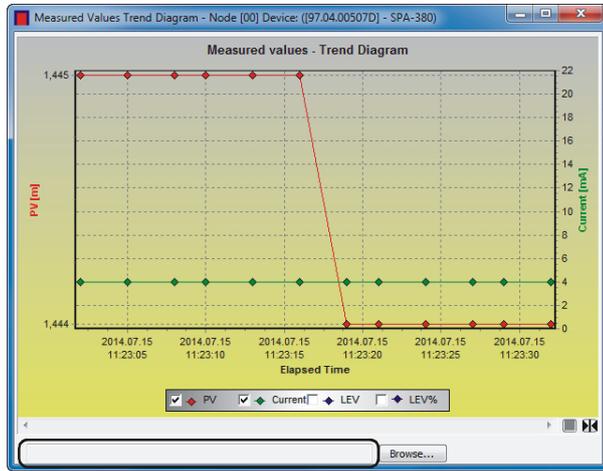


The **Right Panel** which is also a toolbar panel but on the right side including Archive Info, Archive settings and quick buttons related to the Recording menu. The Right Panel can be customized by the right click popup menu with turning on or off the 'Show Archive Info', and the 'Show Archive settings' options.



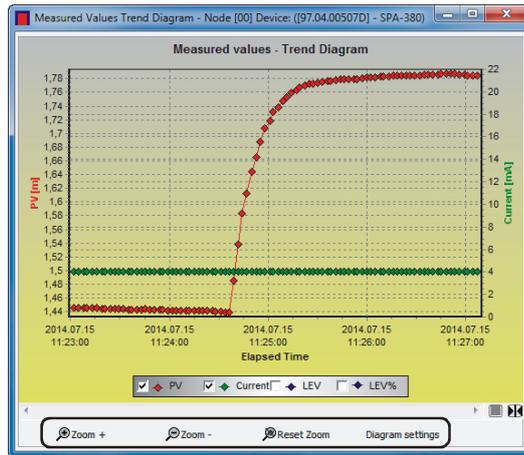
In the Archive settings the measured values can be selected which will be saved to file. Clicking the Start or the Save Trend will perform saving in accordance to the above described. The Settings button opens the Archive settings window.

In the **Panels -> Bottom Panel** menu there is a **Show Bottoms Panel** command activating a Browse toolbar under the diagram.



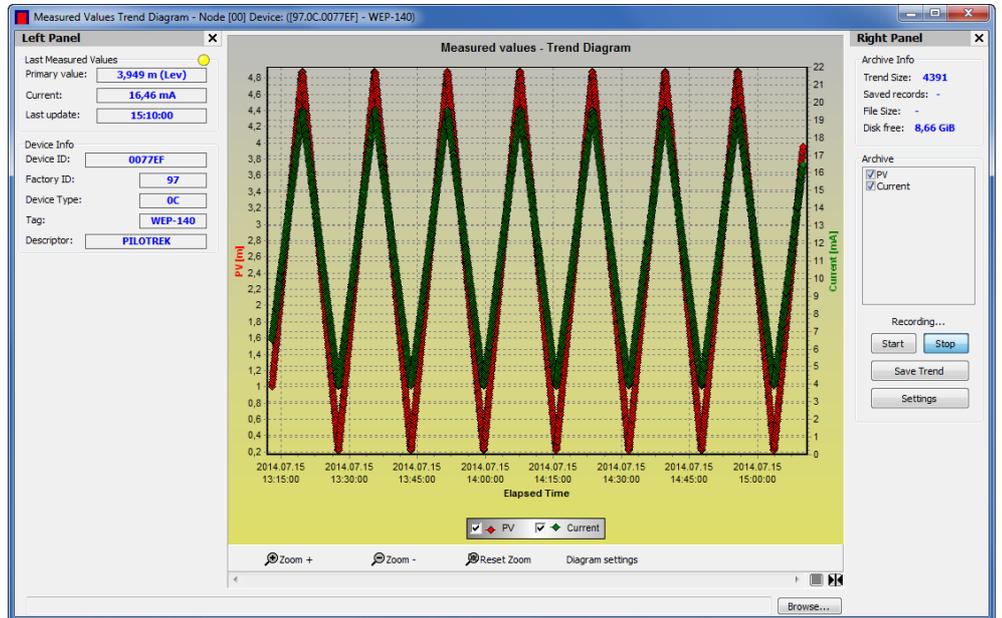
When the saving path has been already selected it is displayed here

In the **Panels -> Button Panel** menu there is a **Show Buttons Panel** command activating quick buttons under the diagram.



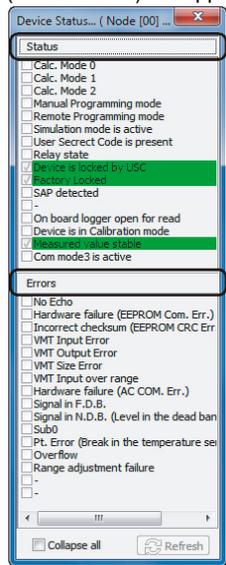
The appeared quick buttons:  
Zoom+, Zoom-, Reset Zoom, Diagram settings

The **All Panels On/Off** command is able to open or close all additional panels of the Trend Diagram with only one click.



## 6.3. STATUS

By clicking the **Show Device Status Window** command in the right mouse button popup menu a Status and error information window appears. This information window is read-only and the actual status can be queried by clicking the **Refresh** button at the bottom. When any data transfer (read or write) is happening the status information is automatically get refreshed and the Refresh button became inactive.



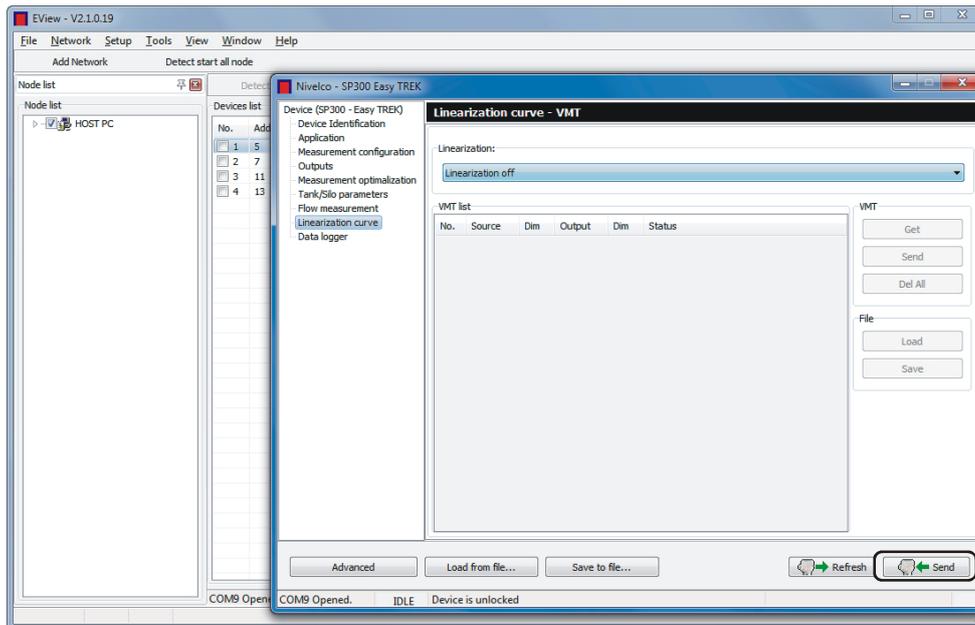
By clicking the Status or the Error line the two status windows can be collapsed

In the Status window there are device specific information displayed such as: Calculation mode, Relay operation, Factory settings, Simulation, etc..

Error indication is displayed in the Error window.

## 6.4. LINEARIZATION (VMT – VOLUME MASS TABLE)

In the **Linearization curve** menu point of the **Device settings** (see chapter 5.6.) the linearization can be turned ON or OFF.

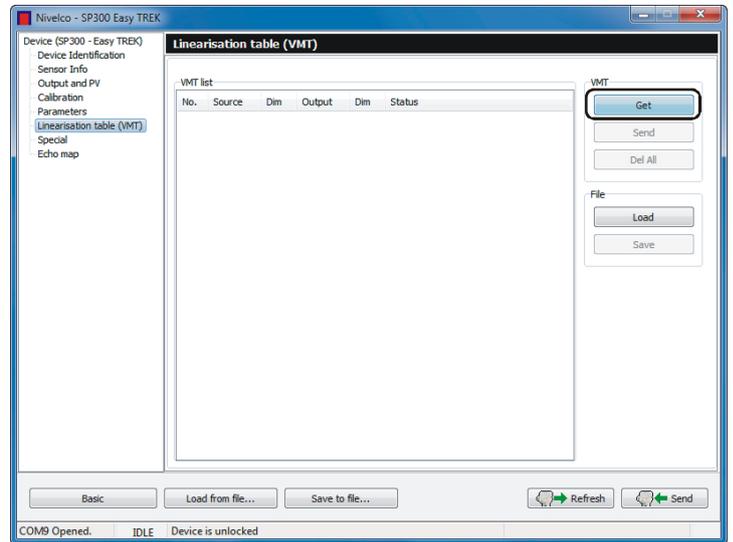


The required setting can be applied by **Send** button.

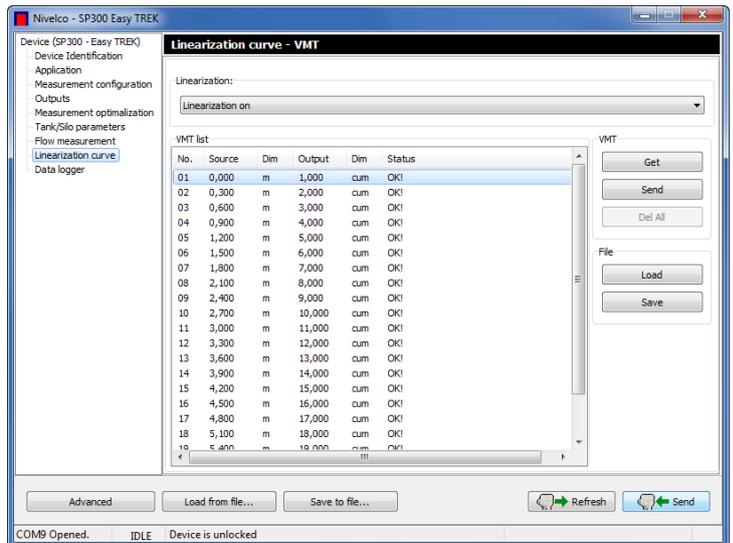
The level, volume or flow values can be assigned to the measured values with the help of linearization. This can be advantageous in case of (level – level assignment for) different sound velocity (various gaseous media then the air) or lying cylindrical tank (level – volume assignment).

The point pairs of the linearization table forms a max. 2x99 matrix displayed in 5 columns with separated columns for the dimensions for the source and the output values. The Source column contains the measurement values and the Output column contains the calibrated or calculated values.

The **VMT** table can be accessed in the **Advanced** menu:



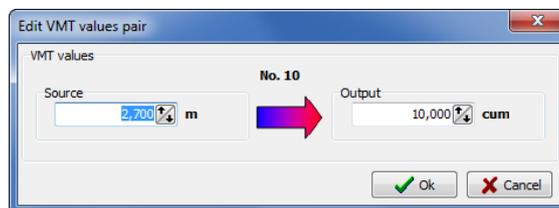
Click the **Get** button to read out the linearization table data from the device:



The right mouse button popup menu provides the following options:

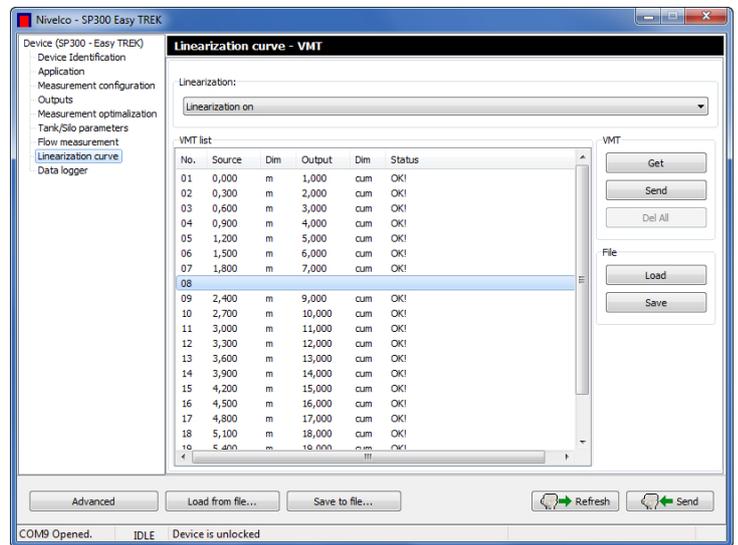
- Edit item,
- Add new item,
- Insert new item,
- Delete the contents,
- Delete item,
- Select all,
- Deselect all,
- Select invert,
- Delete the contents of the all items,
- Delete „Empty” items,
- Renumbering,
- Get VMT items from the device,
- Send VMT items to the device,
- Delete all VMT items from the device,
- Load VMT list items from file,
- Save VMT list items to file.

The **Edit item** command opens a new window for editing a VMT value pair by entering the source and the output value.

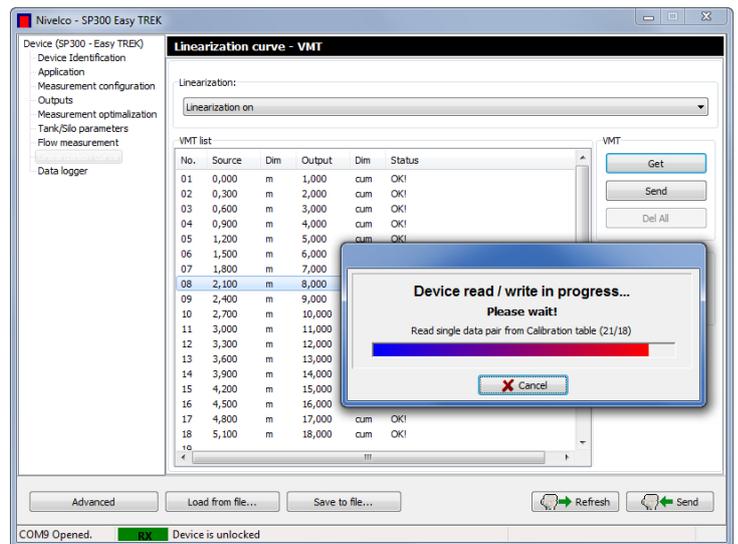


If the linearization table is not full and there is free space then the **Add new item** and **Insert new item** command is active in the right mouse button popup menu.

Click the **Delete the contents of the selected items** command to delete the content from more selected VMT items:



Click the **Get VMT items from the device.** command to query the content of the linearization table:



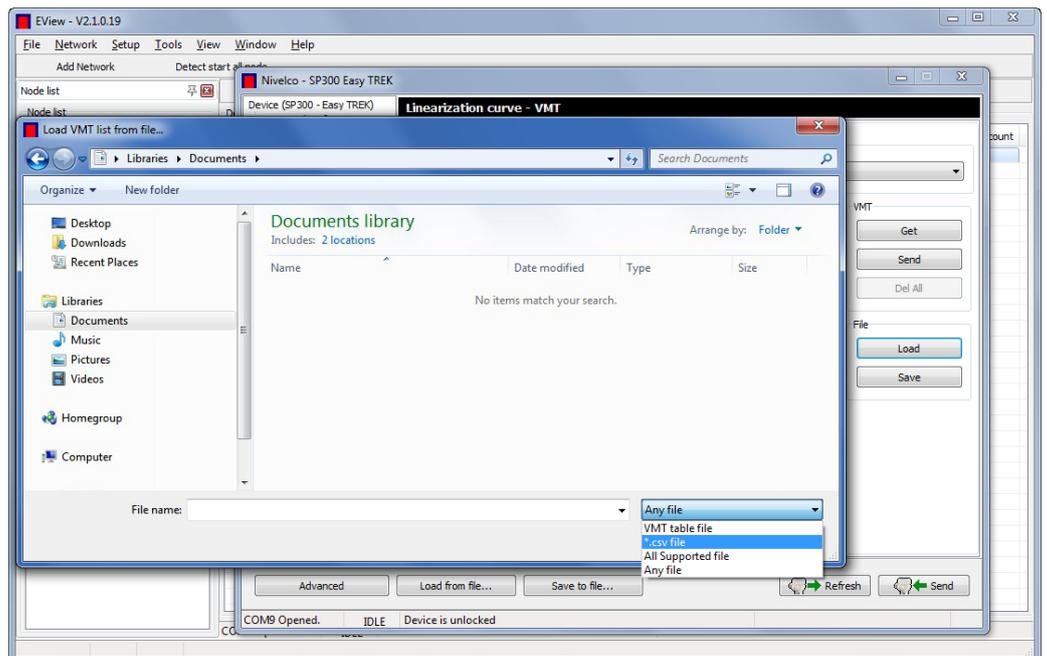
Click the **Delete item(s)** command to delete entirely the selected VMT item(s)

Click the **Delete „empty” items** command to delete the VMT items not containing value pairs.

Click the **Renumbering** command to refresh the list numbers of the VMT items.

The **Send VMT items to the device..** command uploads the linearization data to the device.

If we have an existing VMT list file we can load it by clicking the **Load VMT list items from file** command. Then a new window appears where the file can be browsed:



The VMT list can be saved to file by clicking the **Save VMT list items to file** command. Then the above described new window appears where the folder can be browsed where the file will be saved with the entered file name.

We can choose from multiple file formats for the loading / saving, the VMT data can be saved in \*.csv file format which can be read and write with Excel if the header format is standard.

## 7. TOOLS MENU

In the Tools menu there are integrated, the configuration software related tools which perform handy features like the Parameter File Editor & Viewer and the Record File Viewer.

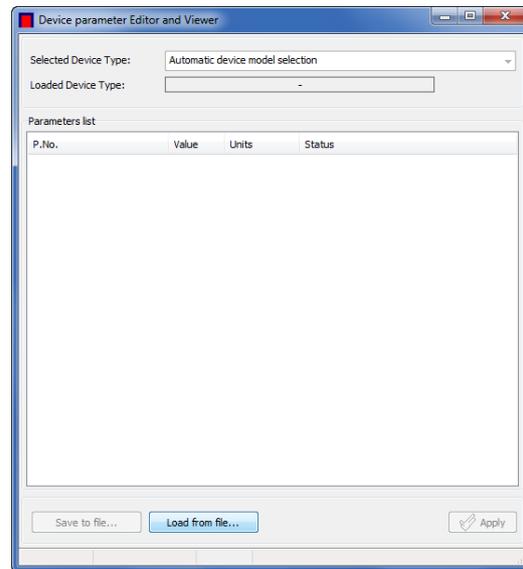
### 7.1. PARAMETER FILE EDITOR & VIEWER

The Parameter File Editor & Viewer is an additional tool which provides possibility to view, handle, even edit the operation parameters of any unconnected transmitter (in offline mode).

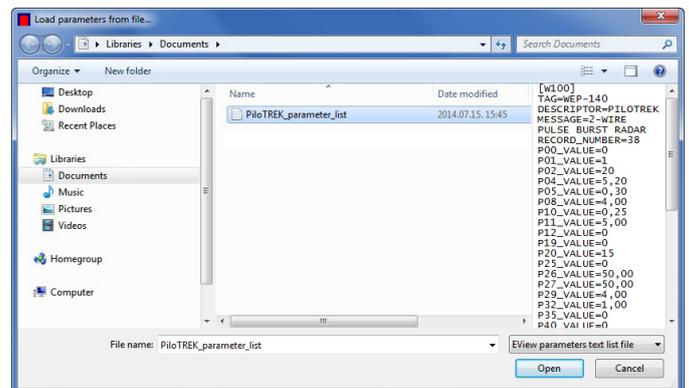
Its usage is very simple, the operation of this tool is very similar to the Advanced mode / Parameters window.

By clicking the Parameter File Editor & Viewer menu point in the Tools menu the following window appears:

There are 3 buttons at the bottom part, 'Save to file...', 'Load from file...' and the 'Apply' from which only the 'Load from file...' is active by default.



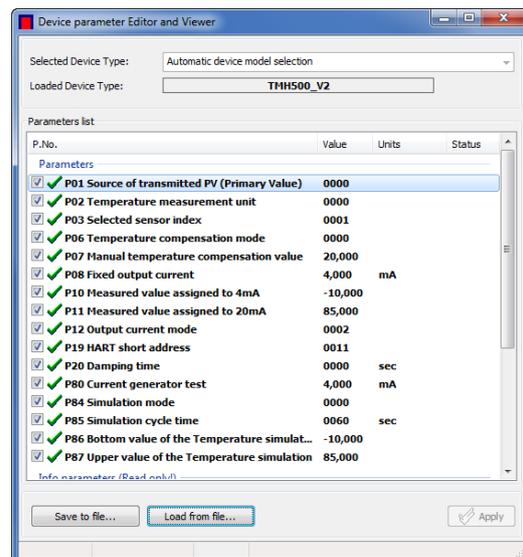
By clicking the 'Load from file...' button a browsing window appears where a previously saved parameter list file can be browsed and opened by clicking the 'Open' button.



The software automatically evaluates the parameter values during the loading and checks if the values are within the acceptable range and marks the elements which has wrong value.

After the successful loading the parameters and the values are displayed in table form:

In the upper side the 'Loaded Device Type' indicates the device type which parameters are listed, and the rest of the window shows the parameters and the values. The first column of the table (P.No.) contain the number and the name of the parameter, the second contains the parameter values, the third contains the possible units. The selected parameter values can be edited by double-click or pressing the 'Enter' button, or by the right-click popup menu 'Edit parameters' command. If the selected parameter is allowed for user modification (or it is not a read-only parameter) then an Edit window appears.



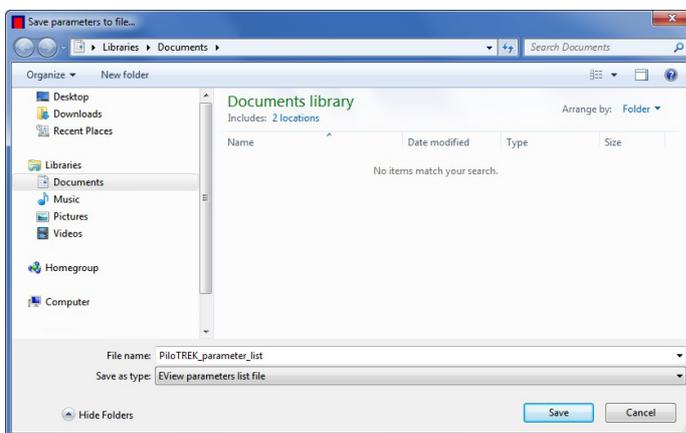
This window provides possibility to modify a parameter value in accordance to the User's and programming manual of the given transmitter. Click the 'OK' button to modify the value. When pressing the 'ESC' key or clicking the 'Cancel' button the parameter value will not be modified.



The modified parameter values can be saved with overwriting the previously used parameter list file, or create a new one by clicking the 'Save to file..' button. The parameters to be saved can be selected by ticking the checkbox.

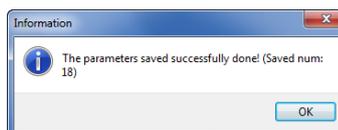
Note! Only the selected (by ticking the checkbox) parameters will be saved!

By clicking the 'Save to file..' button a browsing window appears where the saving path should be selected and the file name should be entered.



After entering the file name the clicking the 'Save' button the selected parameters will be saved to file. By clicking the 'Cancel' button or pressing the 'ESC' key we can go back to the Parameter File Editor & Viewer window without saving the parameters to file.

After the successful saving to file an Information window appear notifying that the parameters saved successfully done and indicating the number of the saved parameters. By clicking the 'Ok' button will result to go back to the Parameter File Editor & Viewer window.



To go exit from the Parameter File Editor & Viewer simply close the window (Alt+F4).