Software for addressing, calibration and parameterization
for PolyGard®2 and PolyXeta®2 Series

# DPT6 EasyConf Software

# User Manual

March 2016

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**DGC6 EasyConfig Software for Addressing and Calibration**

# 1 Application

1.1 Addressing of the PolyGard® and PolyXeta® devices

1.2 Calibration of gain and zero-point of the PolyGard® and PolyXeta® devices

1.3 Calibration of gain and zero-point of the AT6 devices

1.4 Configuration of application parameters of the PolyGard® and PolyXeta® devices

1.5 Long-term recording on hard disk in .csv format

1.6 Monitoring of all measuring values at a glance, live

# 2 Scope of Delivery

The DGC6 EasyConf Software is delivered on a portable USB stick (flash drive).

The EasyConf Software has to be started from this USB stick in order to use the available functions. On the USB stick there are binary data files that must not be opened and/or changed, otherwise the functions cannot be performed.

The EasyConf Software is an alternative solution to the STL Service Tool.

Please use the included USB-RS485 adapter to connect the PC to the sensor

# 3 Installation

Connect your PC via the USB cable to the adapter. This will automatically start to install the driver for the USB-RS485 adapter. A virtual COM port will be generated and this new port number is required later for configuring the EasyConf Software.

You can also use other RS485 adapters other than that one included in delivery (but they aren't tested by INTEC Controls!) to establish the communication with the controller. For all other connections the MSR-INTEC adapter is required.

It isn't necessary to install the EasyConf Software, since all parts of the program will be started during runtime.

The EasyConf is approved for the following Windows versions:

Windows® XP
Windows® VISTA
Windows® 7 (set compatibility to Windows XP)
Windows® 8 (set compatibility to Windows XP)
Windows® 10 (set compatibility to Windows XP)

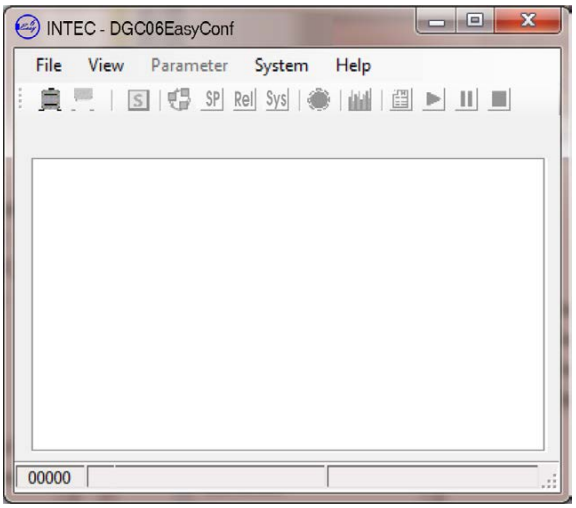
# 4 Main Window with Short Description

Before the main window starts, the rights are checked again.

**Attention:**
**If the software EasyConf isn't started from the USB stick (to be found inside the box) or if the rights check fails, the software will be closed again without even showing the main window.**

The main window opens only after successful verification.

The company name and the name of the software will appear in the window heading.



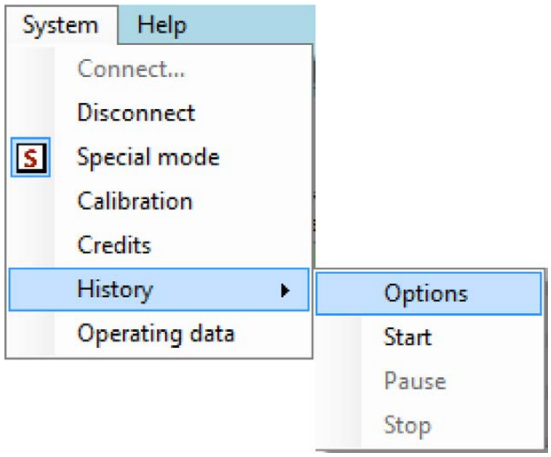

**Menu bar:**

- '**File**' has only one submenu 'Exit' for quitting the application.
- '**View**' has two subitems:
- Language:
  Here you can change the display language.
  British English, German and USA English are currently available.
- Options:
  All possible background colors are listed here.
- '**Parameters**' has four submenus:
  - 'Addressing' opens the dialog for setting the address of the connected device.
    The icon on the toolbar stands for this menu item.
- '**SP Parameters**' opens the dialog where you can manage the settings for the single measuring points in the DGC6 system. The SP icon on the toolbar stands for this menu item.
- '**Relay Parameters**' opens the dialog where you can manage the settings for the single relay outputs in the DGC6 system. The Rel icon on the toolbar stands for this menu item.
- '**System Parameters**' opens the dialog where you can manage the system parameters of the DGC6 system. The Sys icon on the toolbar stands for this menu item.

The menu items are only active if the connection to the DGC controller is established.

The functions are specified in the following chapters.

- '**System**' has seven submenus:
  - '**Connect**' opens the dialog where you can set the serial COM port. You can also access this dialog via the icon on the toolbar.
  - '**Disconnect**' doesn't open a new dialog window, but interrupts the connection to the COM port. It is also possible to use the icon on the toolbar to stop the connection.
  - '**Special mode**' doesn't open a dialog window either, but sets the connected device into special mode. If activated again, the special mode is cancelled and the device will return to the measurement mode. The special mode can be switched on or off with the icon on the toolbar.




    If the device is in the special mode, the colour of menu bar and toolbar changes to blue and the icon will be displayed in the system menu.
  - '**Calibration**' opens the calibration dialog. The functions of this window are specified in detail later. The icon on the toolbar stands for this menu item.
  - '**Credits**' displays the current number of the remaining credits and asks whether you want to load them up. *Credit allowance applies only to specific maintenance plans.*
  - '**History**' contains four submenus:

    Options: starts the history dialog where you can change all settings for data recording. The icon on the toolbar stands for this menu item.

    Start: With a click on the start button the recording is started. The icon on the toolbar stands for this menu item.

    Pause: With a click on the pause button the recording is interrupted. The icon on the toolbar stands for this menu item.

    Stop: With a click on the stop button the recording is stopped. The icon on the toolbar stands for this menu item.

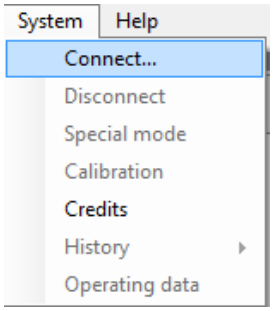
    The functions of the history window are described in detail later.
  - '**Operating data**' opens the operating data dialog. The functions of this window are described in detail later. The icon on the toolbar stands for this menu item.

Under the toolbar, there is a system tray displaying error messages concerning the communication with the connected device.

The middle section of the main window varies according to the connected device. This is described in detail later.

At the very bottom of the status bar the following information is displayed:
- Software version of the master
- The system tray where currently only the information on the history is displayed.
- Connected COM port with baud rate.

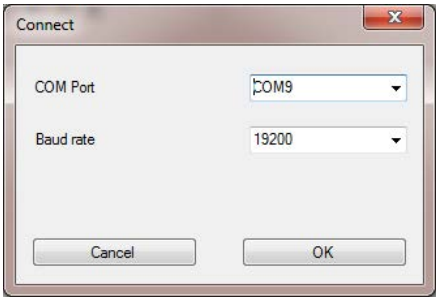
# 5 Establish the Connection




When you click on the 'Connect' button or on the icon, the application opens the dialog for setting the serial port.

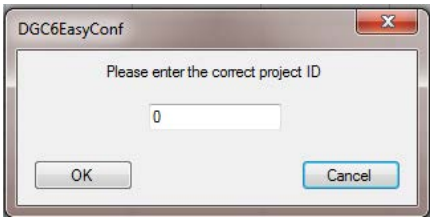
Only those COM ports are displayed that are active on the PC. By clicking OK you can establish the connection to the COM port.

The display in the main window varies depending on the connected device.




***Attention***:

If the authorization key of EasyConf Software differs from the authorization key of the connected device, a window will appear showing the input screen for project ID (available from the system installer).



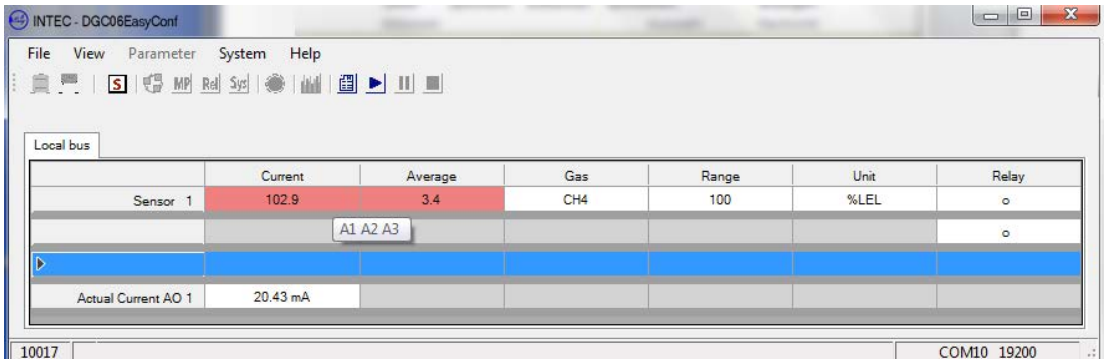

The mask remains open until you have entered the correct project ID and confirmed with OK or canceled the input by using the cancel button.

If you click on cancel, the application will close!

If you enter the correct project ID, the input screen will release the application and you can use all functions to the full extent.

## 5.1 Local Bus

DGC6 EasyConf Software is connected via the COM port to the devices of the IO class (e.g. DT6, DC6).



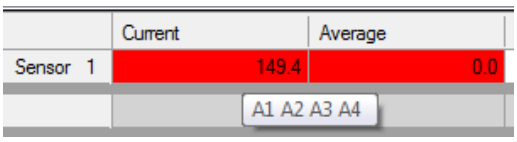

A table with four lines appears in the middle of the main window. The first column of the table is a header column for each line. If the sensor is activated, the text 'Sensor X' will appear in this column with X being a number between 1 and 4, otherwise the header column remains empty.

The following columns give more information on the connected digital SC head or the analog input.

- **Current and average value**:

  The current and average values of the connected digital SC head or the analog input are displayed here. If the alarm thresholds are set to 0, the alarm evaluation won't take place and the readings will be displayed without alarm (usually backlighted in green).

  If the threshold values are set greater than zero at the measuring point, a local alarm evaluation is active and the alarms are marked with different background colors. In addition, a tooltip displaying the active alarm thresholds will appear, if you click in the cell.



- **Gas**:
  The gas type of the connected digital SC head or the analog input is displayed here.
- **Range**:
  The measuring range of the connected digital SC head or the analog input is displayed here.
- **Unit**:
  The unit of the connected digital SC head or the analog input is displayed here.

The last column 'Relay' shows the current status of available relays of the connected device.
- means that the relay coil is de-energized
- means that the relay is energized.

The indicator reflects the actual energization state of the relays, regardless of the parameterization.

For devices with less than four input signals (DT6, DC6) the read-back information (current value) of the analog output signals appears in the 4th line.

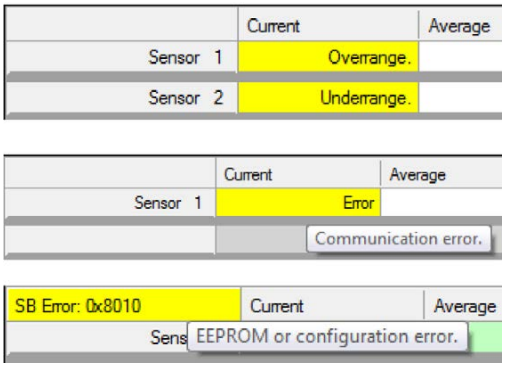
It has already been converted to the current range of 0- 22 mA (measuring range 4-20 mA).

### 5.1.1 Display of Possible Error Messages

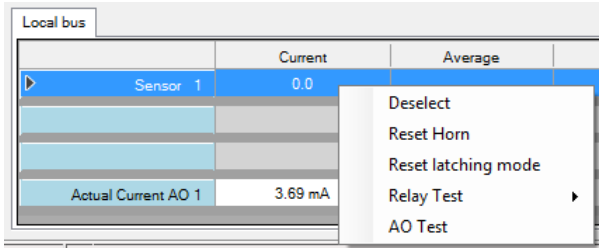
A distinction is made between device faults and measurement point errors.

Messages only concerning the measured value will appear in the column Current. This also includes the communication error to the digital sensor head(s).

Messages generated by the sensor board or EP module will appear in the upper left corner of the table. The messages are displayed in the form of an error code. The detailed breakdown can be read in the tooltip.




### 5.1.2 Context Menu in the Local Bus

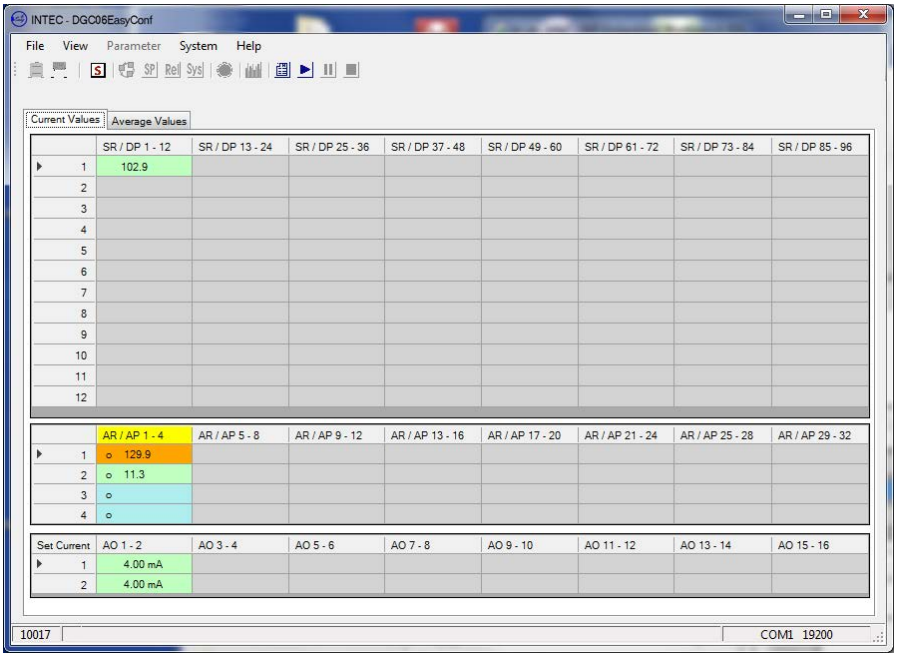



- **Deselect**: The highlighted area is free again.
- **Acknowledge Horn**: Allows acknowledging the horn via the software interface
- **Acknowledge Latching**: Allows acknowledging the latching
- **Relay Test**: Appears only if special mode is activated and relays are available.
  It has three submenus:
  - Alarm Test ON: Turns the relay in the alarm state.
  - Alarm Test OFF: Turns the relay in the alarm-free state.
  - Automatic: Turns the test function off, the relay returns to its normal function.
- **AO Test**: Appears only if special mode and the analog output are activated.
  It allows testing of the analog output by setting a fixed value. See point 5.2.2.

## 5.2 Field Bus = DGC-06 Controller

DGC6 EasyConf Software is connected via the COM port to the GC controller.

In the middle of the main window two tabs appear containing two tables and a block each. The first tab shows the current values and the second the averages. Both tabs are constructed identically, so only the tab with current values is described herein.




The first larger table shows the current values of the 96 possible digital measuring point addresses. The second table displays the current values of a total of 32 possible analog measuring point addresses.

The cells of inactive measurement points are gray and empty.

The cells with inactive measuring points, but with active relays are shown with light blue background color and the relay status.

The cells with active measuring points display the actual value with different background colors depending on the alarm status of the measurement point. The definitions of the colors can be looked up in Options.

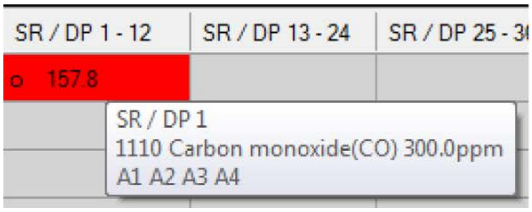
In addition to the current value each cell contains further information about the respective measuring point:

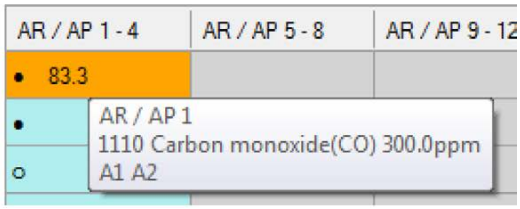
The following icons may be displayed on the left next to the current value:

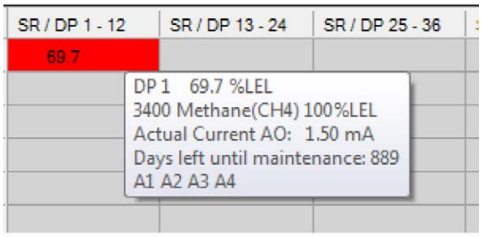
# means that this measuring point needs maintenance. The maintenance for analog measurement points is monitored and reported by the EP module, so here the display is simultaneous for all four possible analog measuring points.

or information concerning the relay status. These icons may only appear if the relay is used at this address. The icons reflect the energization state of the relay, regardless of the parameter setting operating/quiescent current or the relay contacts used.

The alarm status is shown by the colored background of the cell.

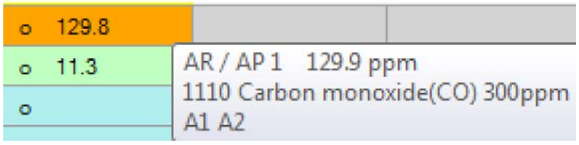





When the mouse pointer hovers over the cell, a tooltip window pops up showing the following additional information:

- Relay or measuring point address including the current measuring value
- Nomenclature number with the gas type of the connected measuring point
- Measuring range and unit of the connected measuring point
- Active alarms
- Present current of the analog output
- Number of days left until next maintenance



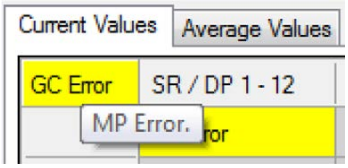

The lower block displays the control information (set point) of the 16 possible analog outputs. It has already been converted to the output current range of 0-22 mA (measuring range 4-20 mA).

### 5.2.1 Display of Possible Error Messages

A distinction is made between system errors and measurement point errors.

Messages only concerning the measured value will appear in the cell instead of the valid current value. This also includes the communication error to the sensor board or the digital sensor head.

Messages generated by the GC controller will appear in the upper left corner of the table. The messages are displayed in the form of an error code. The detailed breakdown can be read in the tooltip.

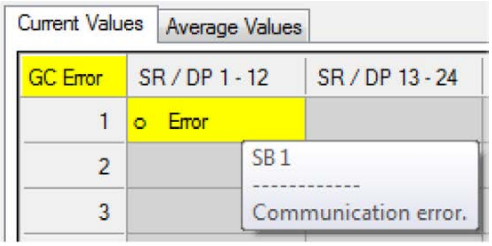



If there is an error at a measuring point, the GC controller, too, will generate an error message; therefore, the two messages always occur together.

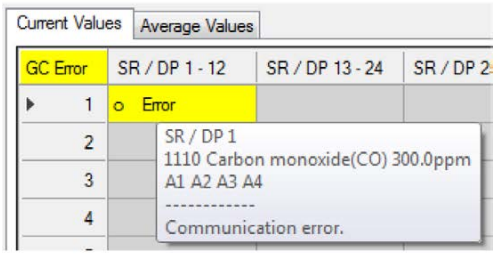
If the current value is displayed, but highlighted in yellow, then there is a configuration conflict between GC controller and SB.

An automatic measuring point configuration was deliberately omitted in order to obtain a high level of security when configuring,

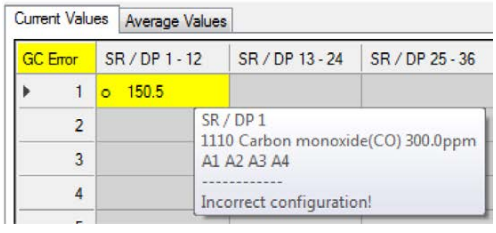
The installer must consciously enter the configuration of each measurement point accordingly.



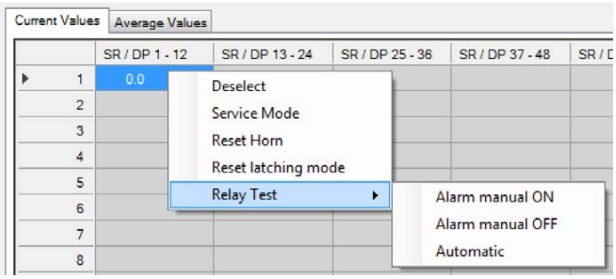

SB 1:
Communication error to SB board

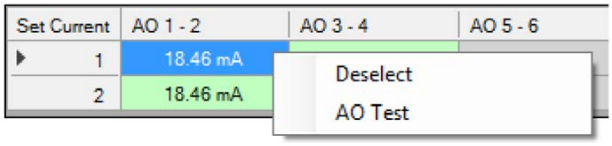



SR/DP 1:
Communication error to SC head



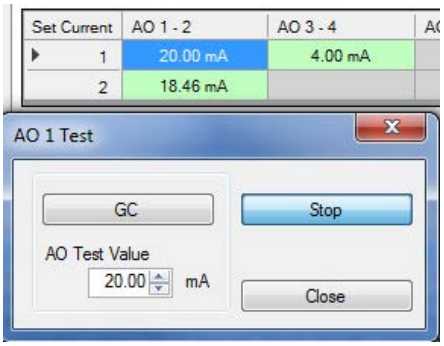
### 5.2.2 Context Menu in the Central Bus




- Deselect: The highlighted area is free again.
- Service Mode: Allows the local setting of the special mode in the corresponding device with the address of the selected cell (option, only available for PX central unit)
- Acknowledge horn: Allows acknowledging the horn with the address of the selected cell via the software interface.
- Acknowledge latching: Allows acknowledging the latching at the selected address.
- Relay test: Appears only if special mode is activated and relays are available. It has three submenus:
    - Alarm Test ON: Turns the relay in the alarm state.
    - Alarm Test OFF: Turns the relay in the alarm-free state.
    - Automatic: Turns the test function off, the relay returns to its normal function.
- AO test: Appears only if special mode and the analog output are activated.

  Allows testing of the analog output by setting a fixed value.




- The left button sets the device, where the AO should be tested; usually the software takes over the setting automatically.
- The test value for the AO is set in the AO test value field in the range of 0-22 mA.
- The upper right button starts or stops the transmission of the test value.
- The bottom right button closes the window for the AO test; if the transfer of the test value is still active, it will be interrupted.

# 6 Parameters

**Attention:**
**The parameter buttons are only enabled in the special mode.**

The menu item Parameters includes four dialogs.

## 6.1 Addressing

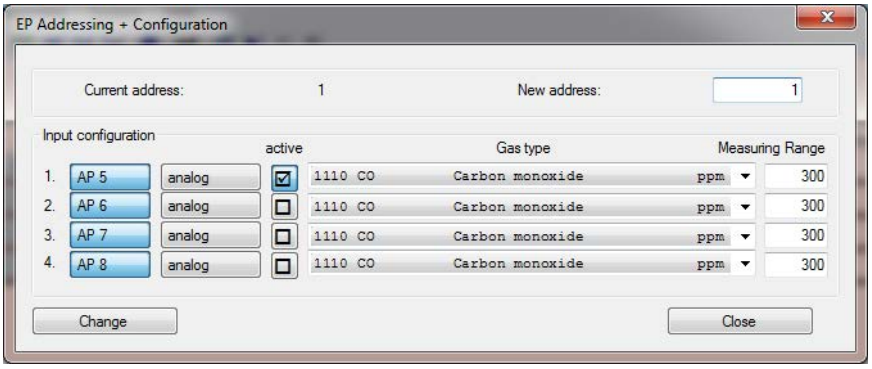
This dialog opens via Parameters  Addressing or via the quick access toolbar with the icon. It is always the device the PC tool is connected via COM port that will be addressed. With the 'Change' button, the new address and any configuration changes are stored.

### 6.1.1 Addressing of GC

The slave address of the GC controller is assigned here. It is required on the M-Bus for communication with an alarm master unit.

### 6.1.2 Addressing of EP Module

Here the slave address is assigned to an EP module. It is required on the field bus for communication with the central GC. Addresses from 1 to 7 are allowed, since there is a maximum of seven expansion modules.



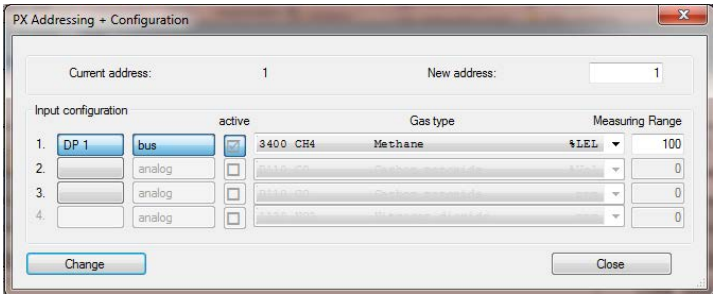

The configuration of the EP module is set here in addition.

1. column:
   Number of analog inputs with respect to the connected device.
   Corresponds to SP number 1-4 in SP Parameters.
2. column:
   Four analog inputs can be set. They are available at all times, so the addresses are always reserved and the buttons AP (X) to AP (X+3) are always active. The first four analog inputs can only be set in the controller (GC module), so the AP addresses of the EP module with address 1 start in line 1 with address. AP 5.
3. column:
   Since there are only analog inputs, the buttons in the third column always remain analog.
4. column:
   Active: Here you can enable or disable the analog inputs.
   Corresponds to the settings in the SP Parameters menu.
5. column:
   Gas type: Here you can select the gas type of the connected analog sensor.
   Corresponds to the settings in the SP Parameters menu.
6. column:
   Measuring range: Here you can set the measuring range of the connected analog sensor.
   Corresponds to the settings in the SP Parameters menu.

### 6.1.3 Addressing of PX

Here the slave address is assigned to a PX device. It is required on the field bus for communication with the GC central device. Addresses are allowed from 1-96, because there can be a maximum of 96 digital measuring points.

The desired configuration of the PX device (SC head type) is set here in addition.



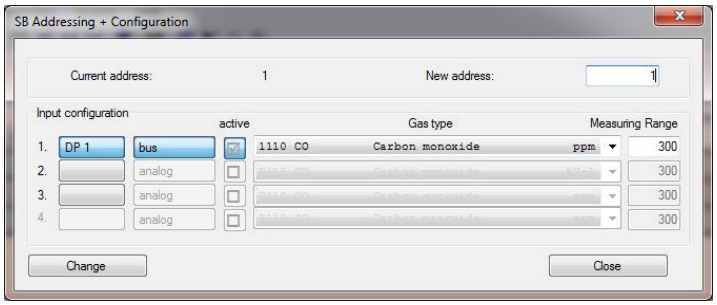

1. column:
   SP number related to the connected device. Corresponds to the SP number 1-4 in SP Parameters, with PX only having one measuring point. Therefore, the other measurement points of PX devices are always inactive and grayed out.

The columns 2 to 6 are described in the chapter Addressing of SB, for they are identical.

### 6.1.4 Addressing of SB

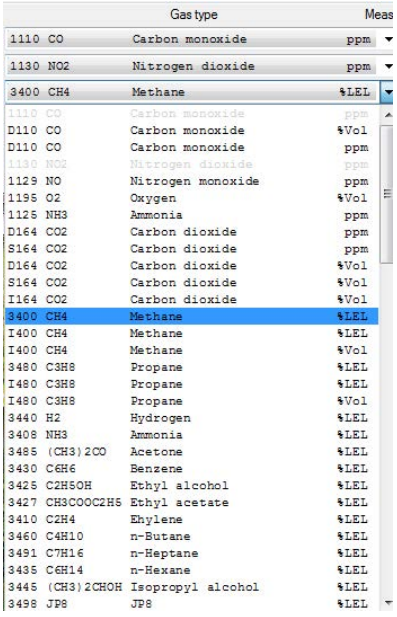
Here the slave address is assigned to a sensor board. It is required on the field bus for communication with the GC central device. . Addresses are allowed from 1-96, because there can be a maximum of 96 digital measuring points.

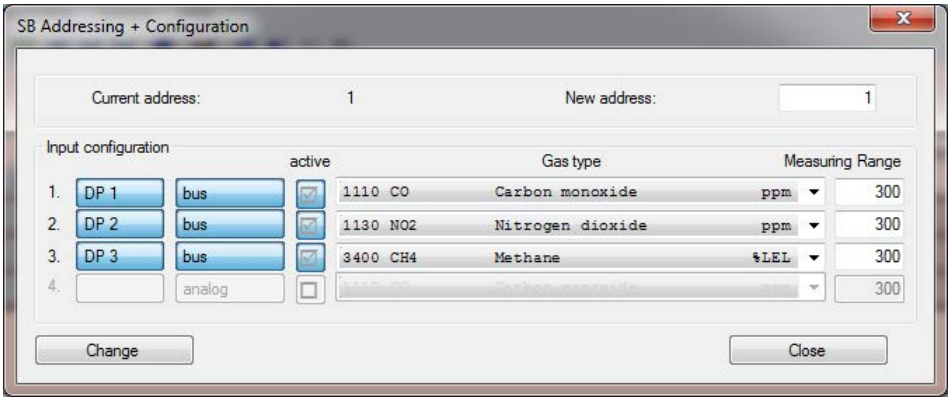
The desired configuration of the sensor boards (SC head type) is set here in addition.




1. column:
   SP number related to the connected device. Corresponds to the SP number 1 – 4 in SP Parameters, with DT6 and DC6 having a maximum of three measuring points. Therefore, the P4 is always inactive and grayed out

2. column:
   Up to three DP can be set. With each additional measurement point the sensor board occupies an additional address on the field bus. With three activated measuring points the addresses X, X + 1 and X + 2 are occupied. These addresses mustn't be assigned to any other sensor board! The GC controller can detect address errors (multiple uses) only via incorrect bus data.



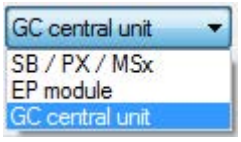



3. column:
   Here you can set whether the measured values should come from the digital SC head or the analog input. No mixed versions are allowed for the SB types, so the settings are instantly applied for all active addresses.
4. column:
   Active: For each additional measurement point occupies one address on the field bus, it is assumed that this measuring point is physically present and is therefore automatically activated when addressed. However, it can be deactivated manually.
5. column:
   Gas type: Here you can select the gas type of the measuring point. Double gas type configurations are not allowed, therefore gas types already used are deactivated in the selection list, displayed greyed out and can only be used as analog measurement points several times.
   Corresponds to the setting in the SP Parameters.
6. column:
   **Measuring range**: The measuring range of the measuring point is set here. Corresponds to the setting in the SP Parameters. It is essential that it corresponds to the measuring range of the SC heads.

## 6.2 Measuring Point SP Parameters

### 6.2.1 Buttons

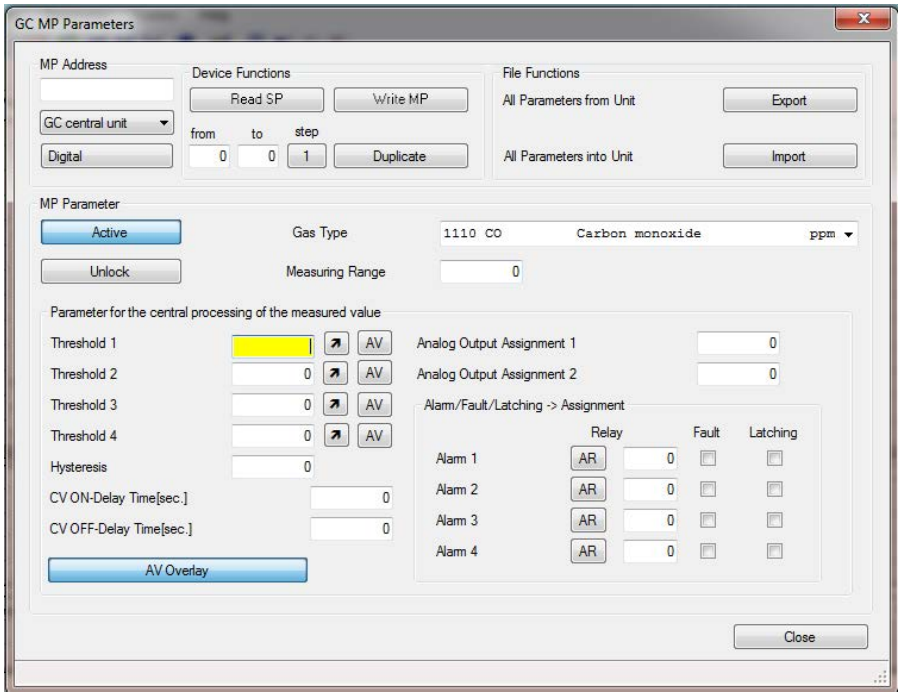
In the upper part of the dialog there are all buttons and input fields for the activation of a measuring point:




1) **SP address:** The address of the measuring point to be parameterized is entered here.
2) Selection field for the target device where the parameters have to be read.
   **Note: Parameters can only be written into a device directly connected to the PC tool.**
3) Button for **Digital** / **Analog**:
   If digital is set, the addresses 1-96 can be set for the digital measuring points in SP Address.
   If analog is set, the addresses 1-32 can be set for the analog measuring points in SP Address.

Two buttons are placed in the middle of the upper half of the dialog:

1) **Read SP**: Here you load the parameters of each measuring point from the selected device in the dialog interface.
2) **Write SP**: Here you can upload the settings from the dialog interface into the connected device.
   If you have selected a device one level down, so this button is inactive.




If you want to enter the same parameters for a plurality of measurement points, you must not upload them individually.

In the dialog, there is a button called Duplicate.

In this area there are also two input fields and a button for specifying a start and an end address. The specified addresses are included when transferring.

The Step button defines whether all measuring points between the start and the end address should be transmitted or only every second or every third address.

All input fields must contain numbers.

*If you make no or incorrect parameter entries and you click yet on an Upload button, the fields containing errors, are highlighted in yellow, an info button appears and the device or file function won't be executed (forcing a correct and plausible input).*

*By clicking on the info button, a message box pops up containing the detailed error description.*

On the top right there is the file area with two buttons:

1) **Export**: With this button the parameters of all measuring points are successively read without showing them in the dialog interface. At the start of transmission, the button changes its text to 'Cancel', so you can cancel the transfer at any time by clicking on the same button; but then the read data will be lost. The remaining buttons are deactivated until the transmission has been completed.

   If the DGC6 EasyConf Software has finished reading, the user is prompted to save the file in the .csv format. If the user cancels the storage process, then all read data will be lost. For storing them in a file, they have to be read again!

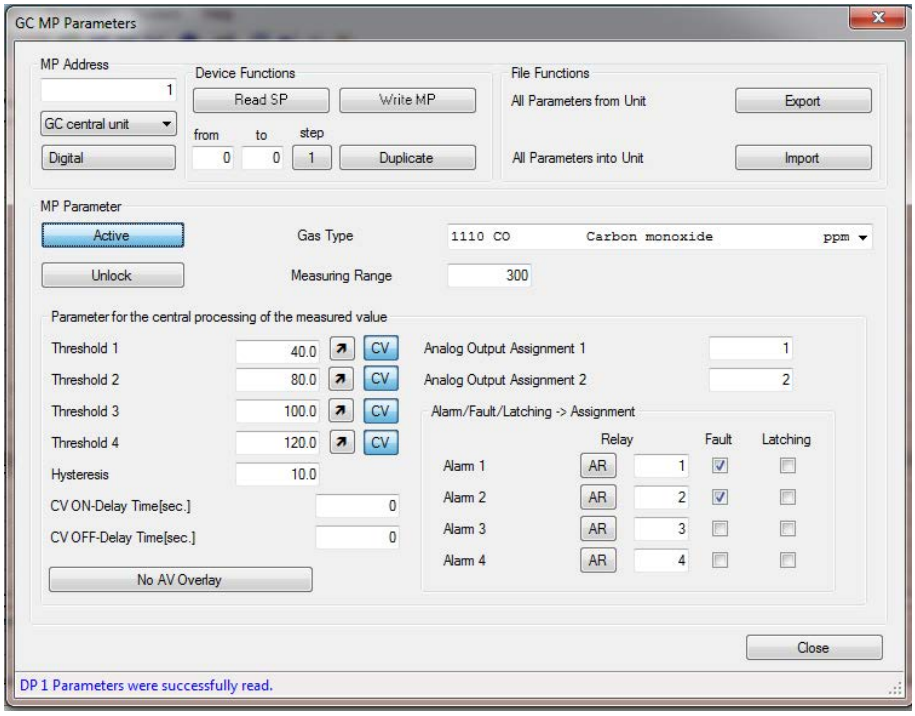
   At the end of the specified filename, the text, SP' is appended to make sure that the measuring point parameters are stored here.

2) **Import**: After clicking on this button, the user is prompted to select the file he wants to load. Once the correct file is selected, all measuring point parameters are consecutively uploaded to the controller. All buttons are disabled during this process.

   If an incorrectly structured file is selected, the transfer will not be admitted.

### 6.2.2 SP Parameters Description

In the middle of the dialog there are all input fields for setting the measuring point parameters:



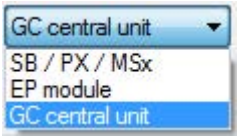

1) **Active or Inactive** indicates whether the measuring point should be activated (physically present).
2) **Unlock or Lock** indicates whether the measuring point should be (temporarily) blocked.
3) **Gas Type**: Here the gas type is assigned to the measuring point.
4) **Measuring Range**: Here the measuring range is assigned to the measuring point.
5) **Threshold 1 - Threshold 4**: Values of the alarm thresholds, each with its own function box for
   - Alarm release at in- or decreasing concentrations
   - Alarm release by current (CV) or average (AV) value.
6) **Hysteresis**: The measured value has to exceed or to fall below the alarm threshold by the hysteresis value, so that the alarm will be deleted.
7) **CV ON Delay Time (sec)**: Switch-on delay for the release by the current value in seconds (not applicable for PX devices, it is always 0).
8) **CV OFF Delay Time (sec)**: Switch-off delay for the release by the current value in seconds.
9) **Average Value Overlay / No AV Overlay**: Average value overlay is only available for gas type CO.
10) **Analog Output**: Assignment of SP to one or two analog outputs.
11) **Alarm / Fault / Latching**
    - Assignment of relay to alarm (Alarm Relays AR 1-32 or Signal Relays SR 1-96)
    - Setting of alarms in case of an error of the measuring point
    - Alarm latching when the gas concentration is again < alarm threshold (requires manual acknowledgment by the operator)

The information about the current operation is displayed at the very bottom of the status field.

## 6.3 Relay Parameters

### 6.3.1 Buttons

Just the same as for the measuring point parameters, all buttons and input fields for the activation of a relay are located in the upper part of the dialog:




1) **Relay Address**: Address of the relay to be parameterized.
2) Selection field for the target device the parameters have to be read from.
   **Note: Parameters can only be written in the device directly connected to the PC tool.**
3) Button for Alarm Relay / Signal Relay (only GC central unit):
   If Alarm Relay is set, you can set addresses from 1 to 32 for the alarm relays in Relay Address.
   If Signal Relay is set, you can set addresses from 1 to 96 for the signal relays in Relay Address.

In the middle of the upper half of the dialog there are two buttons:

1) **Read Relay**: Here you download the parameters of the corresponding relay from the controller into the dialog interface.
2) **Write Relay:** With this button you can write the done settings into the controller, with the parameters being stored under the specified relay address.

Just the same as for the measuring point parameters, there is also the Duplicate button and two input fields for start and end address. Here the relay settings from the start to the end address are transmitted into the controller.

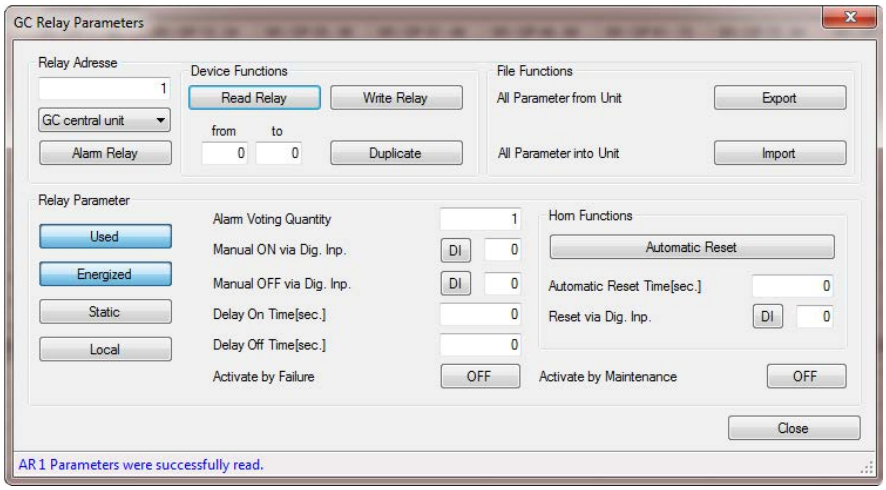
With the Export button all relay parameters are read by the controller and then the user is prompted to save the data in a CSV file. If the user cancels the storage, then all data read will be lost. The transmission can be interrupted at any time just in the same way as for the measuring point parameters.

With the Import button a file that the user has previously selected is uploaded into the controller.

### 6.3.2 SP Parameters Description

Just the same as for the SP parameters, all input fields for setting the parameters of a relay are located in the middle of the dialog:

1) **Used / Unused**:
   indicates whether the relay is physically available.
2) **Energized / De-energized**:
   Operating or quiescent current
3) **Static / Flashing**:
   Static or flashing mode
4) **Local / Remote**:
   Control mode of the relay: own alarm evaluation (local) or override by the GC central unit (remote)



5) **Alarm Trigger Quantity**:
The relay switches only when the number of active alarms has been reached. Only if all alarms are cleared, the relay switches off again.

6) **External relay, manual ON / OFF**:
BI(1-96) / DI(1-32) distinguishes between the digital inputs of SB and EP module.
   a. 'Manual ON via DI': External ON function via digital input
   b. 'Manual OFF via DI': External OFF function via digital input

7) **Delay On**: Delay time for switching-on in seconds.

8) **Delay Off**: Delay time for switching-off in seconds.

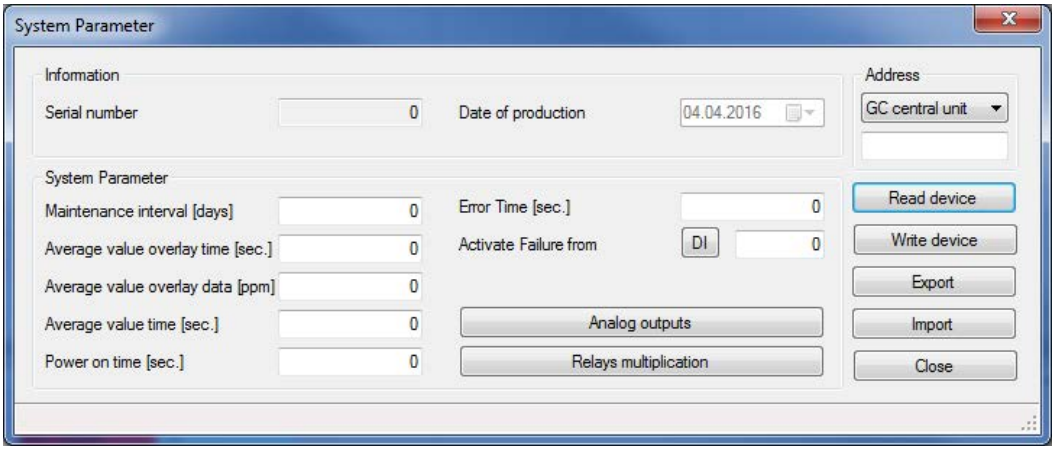
9) **Horn function**:
   a. '**Automatic Reset / Automatic Return**': The text of the time specification adapts depending on the selection.
   b. **Time for automatic reset / Time for automatic return**: is specified in seconds.
   c. **Reset via DI**: The horn is deactivated via the specified digital input DI.
   (Distinction: DI = GC and EP modules, all other field modules = BI)
   If no time is set (0) and no digital input selected (0), the horn functions are inactive.

10) **ON / OFF at Failure**: If ON is set, this relay will always switch together with the collective fault message.

11) **ON / OFF at Maintenance**: If ON is set, this relay will switch together with the maintenance message of the devices.

At the very bottom of the status field the information about the current operation is displayed.

### 6.4 System Parameters




Some information on the device can be found at the upper left of the window. These values can only be read.

1) **Serial number** of the device is always clear without ambiguity.

2) **Date of production**

In the left middle area there are the input fields for the system parameters:

1) **Maintenance interval**: The service interval is entered during each maintenance in the field for current remaining days until maintenance.

2) **Average value overlay**: Averaging overlay in seconds and ppm

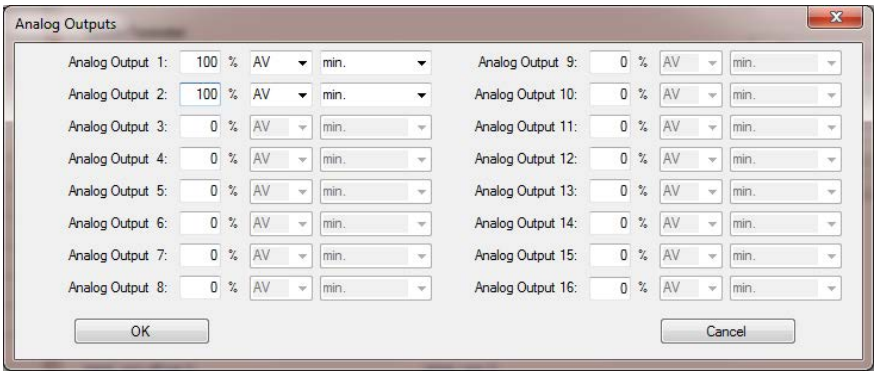
3) **Average value time**: Time base for averaging in seconds

4) **Power On Time**: Start delay of alarm evaluation after switching-on in seconds

5) **Error time in seconds**: is currently not implemented.

6) **Activate failure via DI**: activation of collective fault relays by external DI

7) **Analog outputs**: Button opening an additional dialog for the analog outputs.



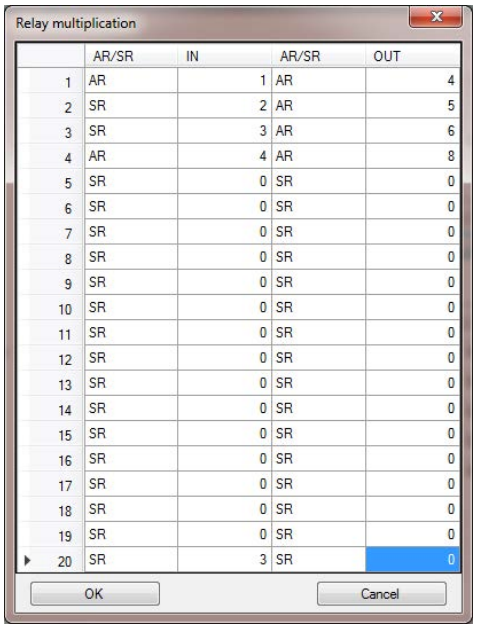

8) Here, a total of 16 available analog outputs can be configured.
The following values can be set per each analog output:
   a. Scaling range:

| | |
|---|---|
| 0 | Analog output not active |
| 1 | Analog output active, but is overridden by the GC central unit<br>(Setting is not available in GC controller as it and only it can control) |
| 10-100 | Analog output active<br>The value indicates the factor how the measuring range is scaled to 4-20 mA, e.g.<br>100% requires 100% of the range scaled to 4-20mA<br>10% only requires 10% of the range scaled to 4-20mA |

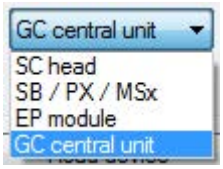
   b. Source for the values to be output: Current or average value.
   c. Definition, which signal of all assigned SP will be output:
   Min.(= minimum gas signal); average (= average calculation); Max.(= maximum gas signal)

With a click on the OK button the settings for the analog inputs are accepted internally. The settings are only written later together with other system parameters.

9) **Relay Multiplication**: Button opening an additional dialog for the relay multiplication. This feature is available only in the GC central unit.
With the relay multiplication table it is possible in the system to assign additional relay functions to an alarm. In the end, this corresponds to one reproduction of the source relay per entry. The additional relay then follows the state of the source relay, but uses its own relay parameters to allow different needs of the doubled relay. So the source relay can be configured for example as a safety function relay in de-energized mode whereas the doubled relay may be defined with flashing function or as horn function relay.
There is a maximum of 20 entries (GC) and three entries (MSC, MSB) for IN and OUT relays. So it is for example possible on the one hand to multiply one relay to n further relays or on the other hand to double max. 15 relays (GC).
In the column IN (source), the relay is set that has been assigned to an alarm in SP Parameters.
In the column OUT (target) the additionally required relay is entered.



Next in the dialog System Parameters:




At the right side there is the control range with buttons:

1) **Address**: Just as with the two previous parameter dialogs the system dialog contains the control range of the addresses with the difference that system parameters can also be read from a SC head.

2) Input field for the address the parameters should be read from.
**Note: Parameters can only be written in the device directly connected to the PC tool.**

Just as with the two previous parameter dialogs, there are two buttons “Read device” and “Write device”. With these buttons the system parameters are read from device into the dialog or written back into the device.

Unlike the other parameter dialogs, there is no Duplicate button, because the system parameters only exist once.

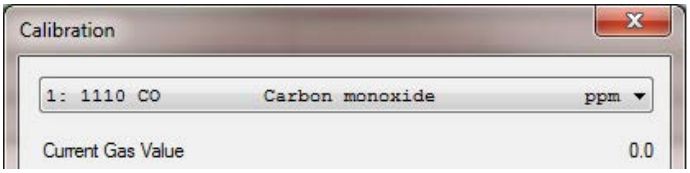
The System Parameters dialog also has two file buttons to save the settings into a file or to upload them from a file.

Unlike the other parameter dialogs, the system parameters are saved from the dialog interface into a CSV file and uploaded from the file into the dialog interface.

# 7 Calibration at the Local Bus

Attention:

The calibration function can only be used when the device is in special mode. Therefore, the menu item and the button for calibration are only active in special mode.

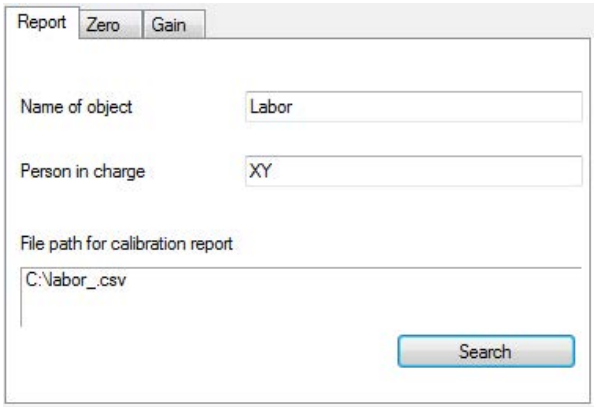



Using this dialog, the SC heads can be recalibrated. The calibration is carried out via the local bus. Please connect the PC software via the COM port to the sensor board.

In the upper part of the dialog there is a selection box where you can define the target head. Directly under it the current value of the set head is displayed.

In the middle of the dialog there are three register tabs: Report, Zero and Gain.
Directly below you can find the system tray with information on the calibration process.
At the bottom right the close button can quit the dialog.

## 7.1 Register Tab “Report”




The tab “Report“ contains:

- a box ‘**Name of object**’:
  Here you can enter the name of the current project.
- a box ‘**Person in charge**’:
  Here you can enter the name of the technician.
- a box with the path to the location of the calibration report.
  The file path can be selected via the ‘Search‘ button.

**Attention:**
**The entries in these fields are important for the calibration, as this information will appear in the calibration report. The software prevents you from switching to the calibration register tabs when the object information fields have not been completed.**

## 7.2 Register Tab “Zero”

Note: Zero calibration gas has to be applied prior to performing this function.

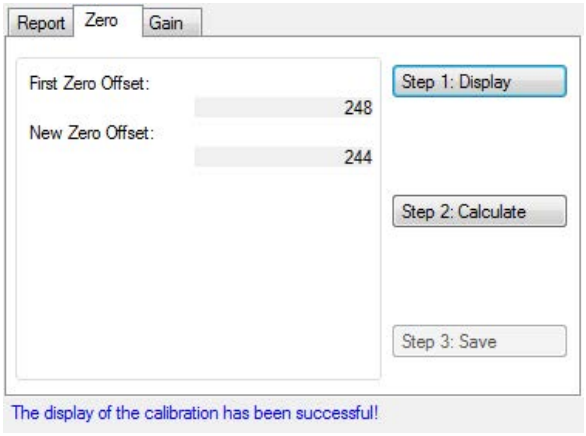
The tab “Zero“ contains:

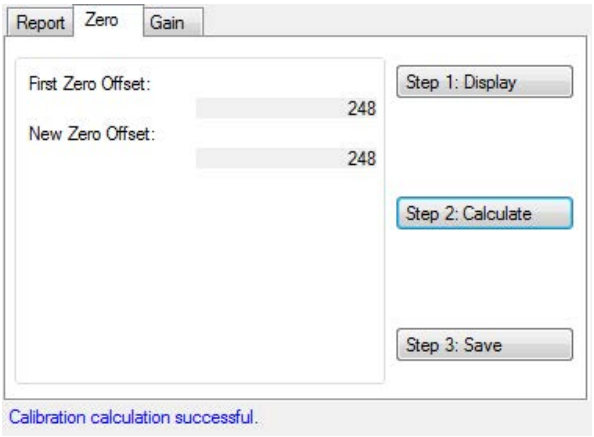
- **First Zero Offset**:
  Here the first zero offset is displayed..
- **New Zero Offset** is displayed as soon as calculated successfully.
- Three buttons:
  Step 1: Display
  Step 2: Calculate
  Step 3: Save

Prior to calibrating the zero point, you have to display the current values by clicking on the button “**Display**”. If the values could be read successfully, then the button “Calculate” is enabled. The current values being displayed are continuously read.

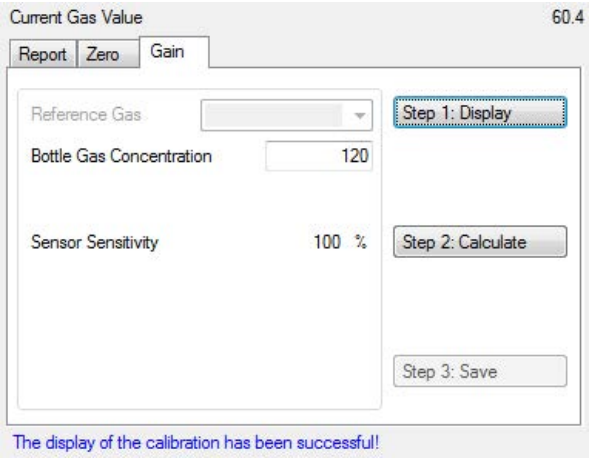
When clicking on the button “**Calculate**” the zero calibration starts. If the calculation of the new zero offset has been successful, the current value in “Current gas value” drops to 0 and the button “**Save**” is activated.

Use the button “**Save**” for saving the new zero offset.



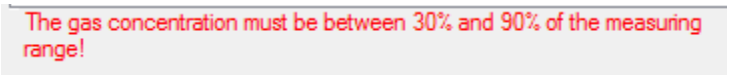
### 7.3 Register Tab “Gain”




The tab “Gain“ contains:

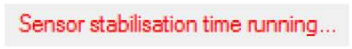
- Reference gas:
  Currently not implemented, intended for the calibration with reference gas.
- Test Gas Concentration: enter the concentration of the test as here.
- Sensor Sensitivity is displayed in %.
- Three buttons:
  Step 1: Display
  Step 2: Calculate
  Step 3: Save

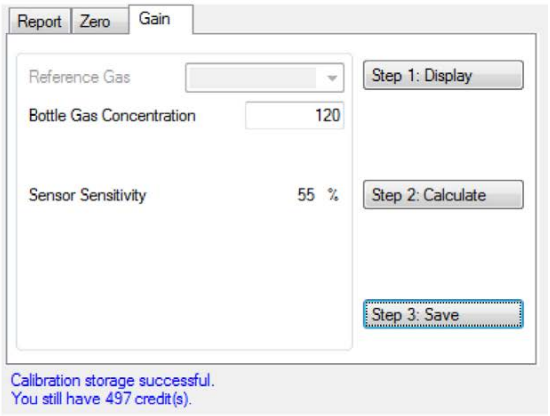
Prior to calibrating the gain, you have to display the current values by clicking on the button “**Display**”. If the values could be read successfully, the “**Calculate**” is enabled. The current value is displayed continuously. Once the test gas concentration has stabilized in the display then click on the button “**Calculate**” the calculation of the new gain is executed and is based on the test gas concentration. If the value of the test gas concentration entered is too high or too low, an error message will appear.



The current status for the calculation is displayed.

When the calculation has been successful, the current sensor sensitivity is displayed, the actual value in “Current gas value” accepts the value of the test gas concentration and the button “**Save**” is enabled.



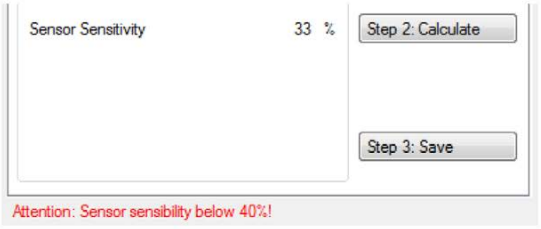

If the gain calibration wasn’t successful, there might be several reasons:

- If the sensor sensitivity is below 30%, the calibration of the gain is canceled. The sensor is either too old and you can no longer calibrate its gain, or there is no calibration gas present on the sensor. Storage is not allowed in this case, therefore, the buttons are disabled.
- If the sensor sensitivity is higher than 30%, but lower than 40%, the gain is calibrated, but it is it noted that the sensor is defective; furthermore, you should check if calibration gas is present on the sensor.
- The calibration of gain is not possible with the following error messages either:

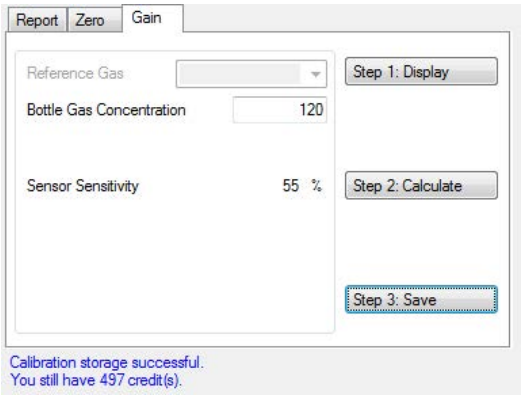
Gas value instable.

Current value too low!
Check gas or replace sensor!

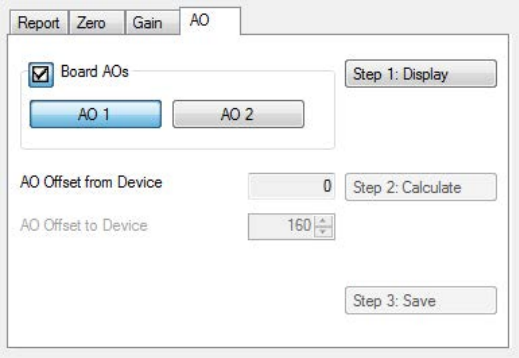
Current value too high!
Check gas or replace sensor!




Use the button “**Save**” for saving the new gain factor.



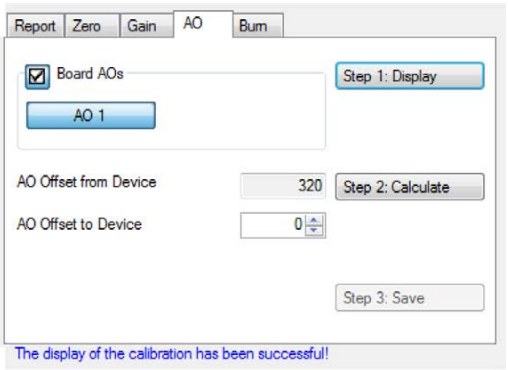
## 7.4 Zero-point Calibration of the Analog Output




The register card AO contains:

- Board AOs: Here you can set whether the analog output of the connected device should be calibrated. If the box isn't ticked, then the device, in which the AO should be calibrated, will be set via the selection field of the measurement points.

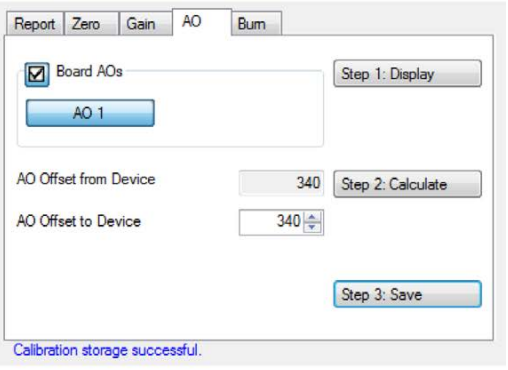
- The buttons AO1 and AO2: depending on the connected device type (SB / PX / EP) there is either only the AO1 button or additionally the AO2 button.
- AO Offset from device: Here the current offset of the analog output is displayed.
- AO Offset to device: Here the new offset is set in the range of 160 to 700 (AD converter value)
- Three buttons:
  **Step 1: Display** | **Step 2: Calculate** | **Step 3: Save**




Prior to calibrating the AO zero-point, you have to display the current values by clicking on the button "**Step 1: Display**". If the values could be read successfully, the corresponding message will be displayed in the system tray, and only then the button "**Step 2: Calculate**" will be enabled. The current values for the display are permanently read, so that in the window the current status is always shown without having to press the button again.

When clicking on the button "**Step 2: Calculate**" the AO zero-point calibration switches to the calculation mode. The calculation of the new signal zero offset is permanently executed and displayed in the corresponding box. So the values are always updated.

When the calculation has been successful, the actual value isn't added to it and the button "**Step 3: Save**" is enabled.



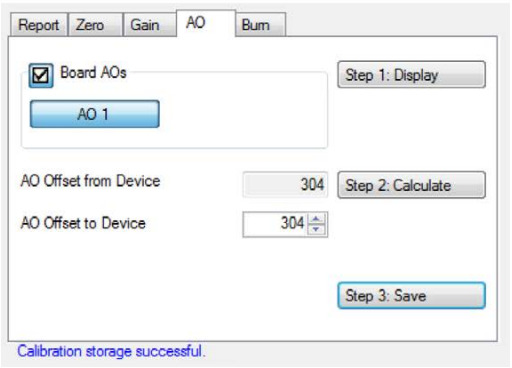

If you cancel the calibration now by closing the dialog box or by changing over to another tab, a message box will be activated asking whether you want to quit this function without saving. With the Yes button you will definitely cancel the function, with the No button you will return to the current dialog.

If you cancel the function definitely or disconnect the device, the recalculated zero offset is lost. After exiting the special mode, the last stored zero offset is used again.

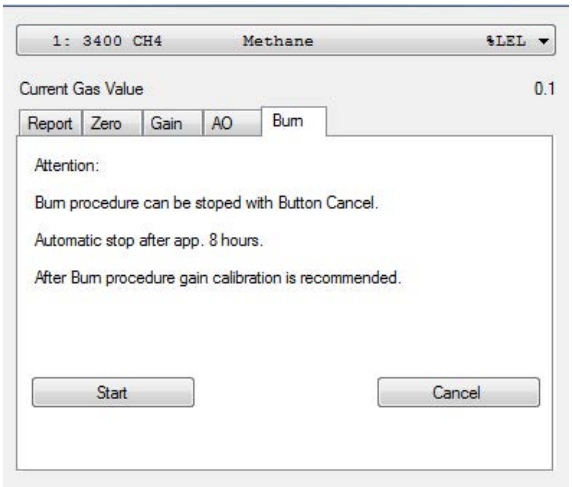
**Note:**
**To calibrate the analog output zero, you need an ammeter to change it until the value corresponds to the desired zero. The lower limit to be set is 2 mA and the upper limit 9.5 mA.**

When the calculation hasn't been successful, the corresponding error message appears in the system tray and the button "**Step 3: Save**" is disabled..

With the "**Step 3: Save**" button the new zero offset is stored and will be used immediately.



## 7.5 Register Tab Self-cleaning by Burning




This register tab is for starting the process of heating a pellistor sensor up for self-cleaning.

- The Start button sets the command for burning free.
- The Cancel button interrupts the burning process.

The buttons are only enabled for Pellistor sensors. The function is for heating catalytic bead sensors (pellistors) up to a higher temperature for a certain time in order to remove any residues on the heating wire. It is used if the sensors show too low sensitivity on some or on all combustible gases due to dirt on the filament.

Before starting the burn-off, a combustible test gas - the best would be hydrogen - has to be applied to the pellistor with a calibration cap in order to intensify the combustion.

**Note:**
**The burning can't improve or undo the natural aging!**

The operation can be stopped with Cancel at any time.

# 8 Operating Data

**Note:**
**The operating data can only be exchanged with the device if the device is in the special mode. Therefore, the operating data buttons are only enabled in the special mode.**

At the top left of the dialog there is the address activation area. It contains the following entry options:

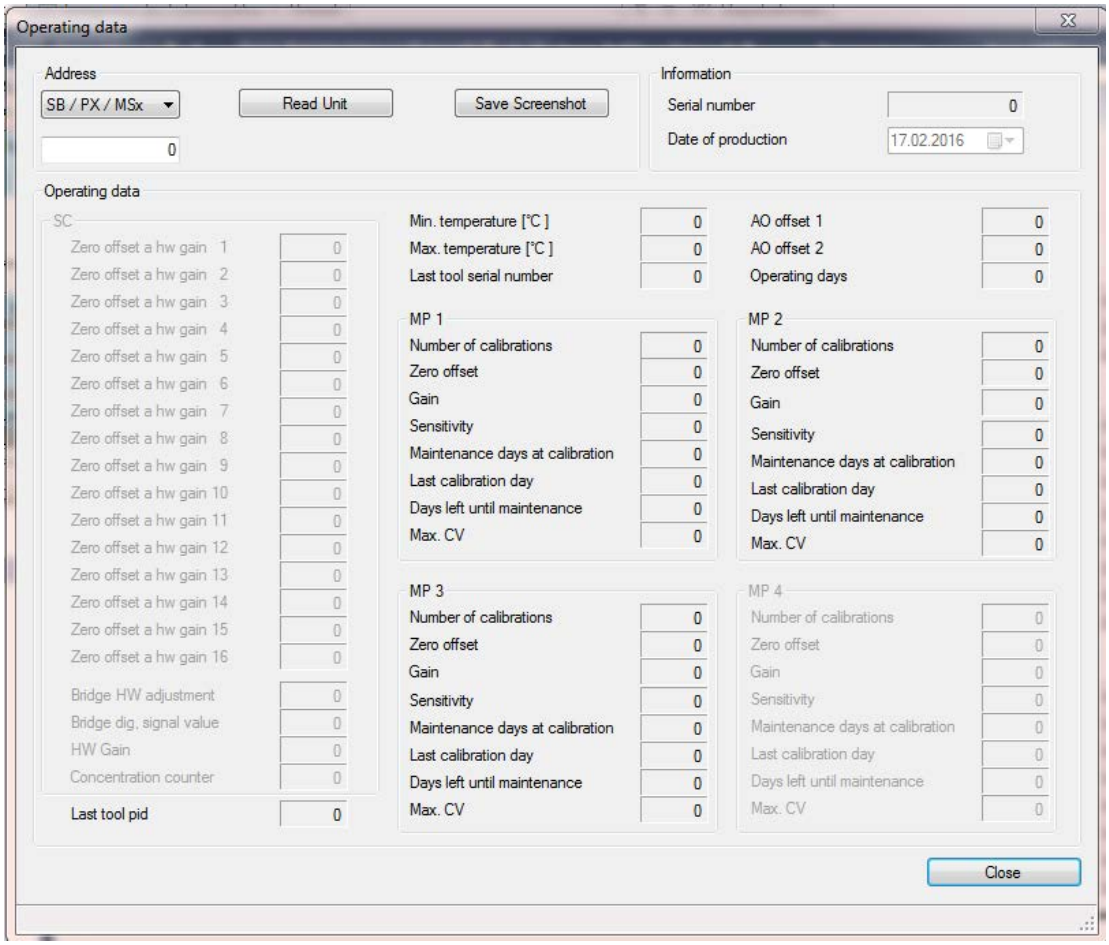
- Selection box Device Type: Device type the operating data are read from.
- Selection box Address: Address the operating data are read from.

Just as for the Parameters you can read out the operating data across hierarchical levels.

- Two buttons: **Read device** and **Write file**. The function for storing the file is not yet implemented.

The information area concerning the device is located to the right of the address field.

- **Serial number** of the device
- **Date of manufacture** of the device




Grey fields are not valid for the read-out device.

The large operating data area is divided into several sections.

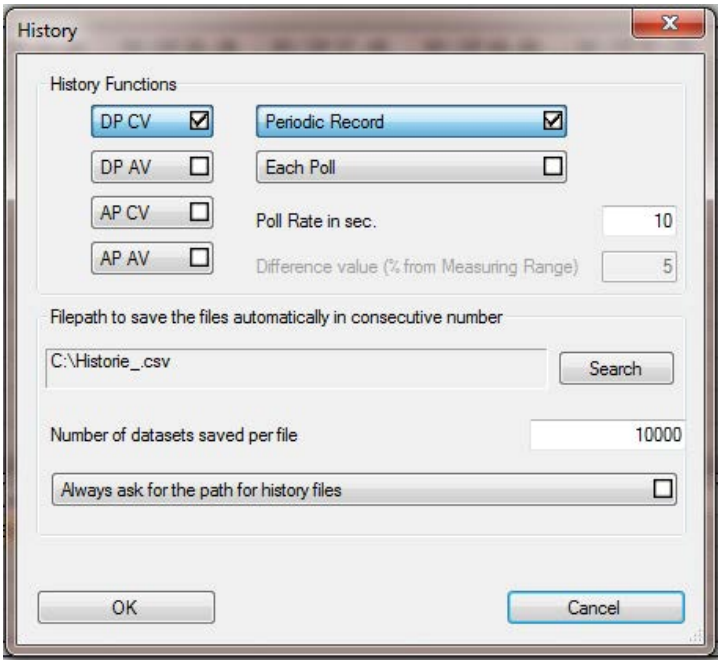
- SC area
  Here only the operating data of a head are displayed.
  - Concentration counter

- SP x
  Here the operating data are displayed based on a measuring point.
  - Number of calibrations
  - Zero offset: current zero offset.
  - Gain: current gain
  - Sensitivity: compared to new condition
  - Maintenance days at calibration
  - Last calibration day: operating day at the last calibration.
  - Days left until maintenance: Number of days remaining until the next maintenance
  - Max CV: Maximum current value
- All other fields are displayed along with each device
  - Last Tool PID: Marking of the tool the last calibration was performed with.
  - Min. temperature
  - Max. temperature
  - Last tool serial number
  - AO offset x
  - Operating days

The Close button closes the window.

# 9 'History' of the Data Logger

The menu item History contains four submenus.




## 9.1 Options

In the upper half, you can manage all settings for the measured value control of all measuring points:

- If only the current value or only the average value, or both are monitored.
- If '**Periodic Record**' is active, monitoring is continuously performed at certain time intervals.
- If '**Each Poll**' is active, storage is performed with each measurement cycle.
  *Note: This setting is not recommended for extended periods of time, since the data transfer between the devices is very fast and the PC cannot keep up the speed.*
- '**Poll rate in sec.**' represents the time interval in which the data are written. As the PC timer is not synchronized with the timer of the device, there may be minimal time delays when recording.
- If '**Periodic Record**' is not active, the values are written by the data logger only if the measured value changes by the '**Difference value**'.

In the bottom half, the path is indicated where the audit records are stored automatically.

Separate files for digital measurement points (DP) and analog measurement points (AP) are started. The corresponding files are marked by the abbreviation DP or AP in the filename.

A consecutive number is automatically added to the specified name of the file, so that the file is not overwritten. If there are already files with the same name in the specified directory, the numbers will continue.

E.g.

- If the files 1, 2 and 3 are in the directory, the DGC6 EasyConf Software will start saving the file with number 4.
- If the files 1, 3, and 6 are in the directory, the file 2 will be written first, then 4, then 5, 7, 8, 9, etc., so that the gaps are filled! This has the disadvantage that it will not be represented in chronological order (e.g. with Excel Diagram).

Each automatically saved file contains as many records as indicated in the field '**Number of datasets saved per file**'

If '**Always ask for the path of history files**' is active, a file storing dialog will appear when starting the history, in order to control the path right from the start.

**Note:**
**Each dataset is directly written into the file. Therefore, the file must not be opened during the ongoing operation of history!**

The user must have access rights for the specified path, otherwise the file will not be written.

The imported data are stored with the OK button.

This function of the DGC6 EasyConf Software allows you to record and monitor the measured values of all connected digital and analog measurement points.

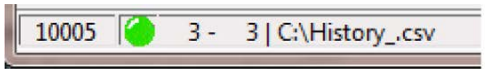
**Note:**
**Missing or incorrect settings will have a serious impact on the monitoring!**

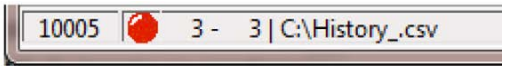
### 9.2 Start

This menu item or button starts the history.

The following information appears at the very bottom of the main window in the status bar.

- A green LED changing to red from time to time. The green LED indicates that history is enabled. If the LED changes to red, a record is just being written into the file.
- Two numbers separated by a minus.
  The first number represents the number of records in the current file with digital measuring points (DP).
  The second number represents the number of records in the current file with analog measurement points (AP).
- The specified path where the files are stored.




**Attention:**

**If the LED flashes green-red, but the numbers remain at 0, the software tries to write the history files, but fails. In this case, please check access rights to the path or run the DGC6 EasyConf Software as an administrator.**

### 9.3 Pause

This menu item or button interrupts the recording. It is useful if you want to view the file in between. If you resume the recording with the start button, the current file will continue to be written.

**Attention: If the file was opened, please pay attention to close the file before restarting.**

### 9.4 Stop

This menu item or button stops the recording. A new file is started after restarting.

## 9.5 Structure of Files

Regardless of whether only digital or only analog measuring points or both are recorded, the files are of an identical structure.

- The first column contains the date and time with hours, minutes and seconds.
- The second column indicates the measurement values as current and / or average values.
- From the third column on, the measured values are displayed. 96 entries for digital measuring points and 32 entries for the analog measured values.

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 17.02.2016 16:22 | CV | 69.6 | - | - | - | - | - |
| 17.02.2016 16:23 | CV | 69.6 | - | - | - | - | - |
| 17.02.2016 16:23 | CV | 69.6 | - | - | - | - | - |
| 17.02.2016 16:23 | CV | 69.7 | - | - | - | - | - |
| 17.02.2016 16:23 | CV | 69.5 | - | - | - | - | - |
| 17.02.2016 16:23 | CV | 69.7 | - | - | - | - | - |
| 17.02.2016 16:23 | CV | 69.6 | - | - | - | - | - |
| 17.02.2016 16:23 | CV | 69.5 | - | - | - | - | - |
| 17.02.2016 16:23 | CV | 69.6 | - | - | - | - | - |

The measured values are displayed according to the measuring range. If the system contains mixed measurement points, the scaling of the measured values may be different according to the measuring range.

A minus instead of the measured value means that the measurement points are not activated.

If there is an error at a measuring point, it is shown in form of a hexadecimal error code.
E.g.: 0x8100 Underrange

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17/02/2016 16:28:38 | CV | 37.6 | 0.8 | 0x8100 | 0x8100 | 63.7 | - | - | - |
| 17/02/2016 16:28:43 | CV | 37.4 | 0.3 | 0x8100 | 0x8100 | 63.5 | - | - | - |
| 17/02/2016 16:28:48 | CV | 37.7 | 1.1 | 0x8100 | 0x8100 | 63.6 | - | - | - |
| 17/02/2016 16:28:54 | CV | 37.6 | 0.8 | 0x8100 | 0x8100 | 63.6 | - | - | - |
| 17/02/2016 16:28:59 | CV | 37.5 | 0.6 | 0x8100 | 0x8100 | 63.6 | - | - | - |
| 17/02/2016 16:29:04 | CV | 37.8 | 1.3 | 0x8100 | 0x8100 | 63.7 | - | - | - |

# 10 Notes and General Information

It is important to read this user manual thoroughly and clearly in order to understand the information and instructions. The PolyGard®2 and PolyXeta®2 devices must be used within product specification capabilities. The appropriate operating and maintenance instructions and recommendations must be followed.

Due to on-going product development, MSR-Electronic-GmbH and/or INTEC Controls reserves the right to change specifications without notice. The information contained herein is based upon data considered to be accurate. However, no guarantee is expressed or implied regarding the accuracy of this data.

## 10.1 Intended Product Application

The PolyGard®2 and PolyXeta®2 devices are designed and manufactured for control applications and air quality compliance in commercial buildings and manufacturing plants.

## 10.2 Installers' Responsibilities

It is the installer's responsibility to ensure that all PolyGard®2 and PolyXeta®2 devices are installed in compliance with all national and local codes and OSHA requirements. Installation should be implemented only by technicians familiar with proper installation techniques and with codes, standards and proper safety procedures for control installations and the latest edition of the National Electrical Code (ANSI/NFPA70). It is also essential to follow strictly all instructions as provided in the user manual.

## 10.3 Maintenance

It is recommended to check the PolyGard®2 and PolyXeta®2 devices regularly. Due to regular maintenance any performance deviations may easily be corrected. Re-calibration and part replacement in the field may be implemented by a qualified technician and with the appropriate tools. Alternatively, the easily removable plug-in device card with the sensor may be returned for service to MSR-Electronic-GmbH and/or INTEC Controls.

## 10.4 Limited Warranty

MSR-Electronic-GmbH and/or INTEC Controls warrants the PolyGard®2 and PolyXeta®2 devices for a period of two (2) years from the date of shipment against defects in material or workmanship. Should any evidence of defects in material or workmanship occur during the warranty period, MSR-Electronic-GmbH and/or INTEC Controls will repair or replace the product at their own discretion, without charge.

This warranty does not apply to units that have been altered, had attempted repair, or been subject to abuse, accidental or otherwise. The warranty also does not apply to units in which the sensor element has been overexposed or gas poisoned. The above warranty is in lieu of all other express warranties, obligations or liabilities.

This warranty applies only to the PolyGard®2 and PolyXeta®2 devices. MSR-Electronic-GmbH and/or INTEC Controls shall not be liable for any incidental or consequential damages arising out of or related to the use of the PolyGard®2 and PolyXeta®2 devices.