



Instruction Manual for LumaSoft Gas Software 7950

BE6023-12

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Safety Considerations

March 2011

Safety Considerations.

Through out this manual Monitor is used for:
Multi-gas Monitor – INNOVA 1316

The Monitor complies with:

CE: CE-mark indicates compliance with EMC Directive and Low Voltage Directive.

Safety:

- EN 61010-1, 2nd (2003): Safety requirements for electrical equipment for measurement, control and laboratory use.

EMC:

- EN61326-1(2003) Electrical equipment for measurement control and laboratory use-EMC requirements.

To ensure safe operation and retain the Monitor in safe condition, note the following:

EXPLOSION HAZARD

TO AVOID THE POSSIBILITY OF AN EXPLOSION; MONITORING OF FLAMMABLE GASES IN EXPLOSIVE CONCENTRATIONS MUST NEVER BE ATTEMPTED.

Never operate the Monitor in potentially explosive environments.

When monitoring potentially flammable or toxic gases it is essential that:

- The instrument itself is placed in a well-ventilated area outside the potentially hazardous zone.
- A sufficiently long tube is connected to the air-outlet on the back panel so that the sampled gas is carried away to the open air or to an extraction and/or filtration unit.

Warnings!

- Avoid water condensation in the Monitor.
- Switch off all equipment before connecting or disconnecting their digital interface. Failure to do so could damage the equipment.
- Whenever it is likely that correct function or operating safety of the apparatus has been impaired, the apparatus must be made inoperative and secured against unintended operation.
- Any adjustment, maintenance and repair of the open apparatus under voltage must be avoided as far as possible and, if unavoidable, must be carried out only by trained personnel.
- If a fault is reported by the Monitor that indicates correct function of the instrument may be impaired, consult your local LumaSense Technologies representative. Under no circumstances should repair be attempted by persons not qualified in service of electronic instrumentation.

Chapter 1

Using this Manual

March 2011

1.1 Introduction

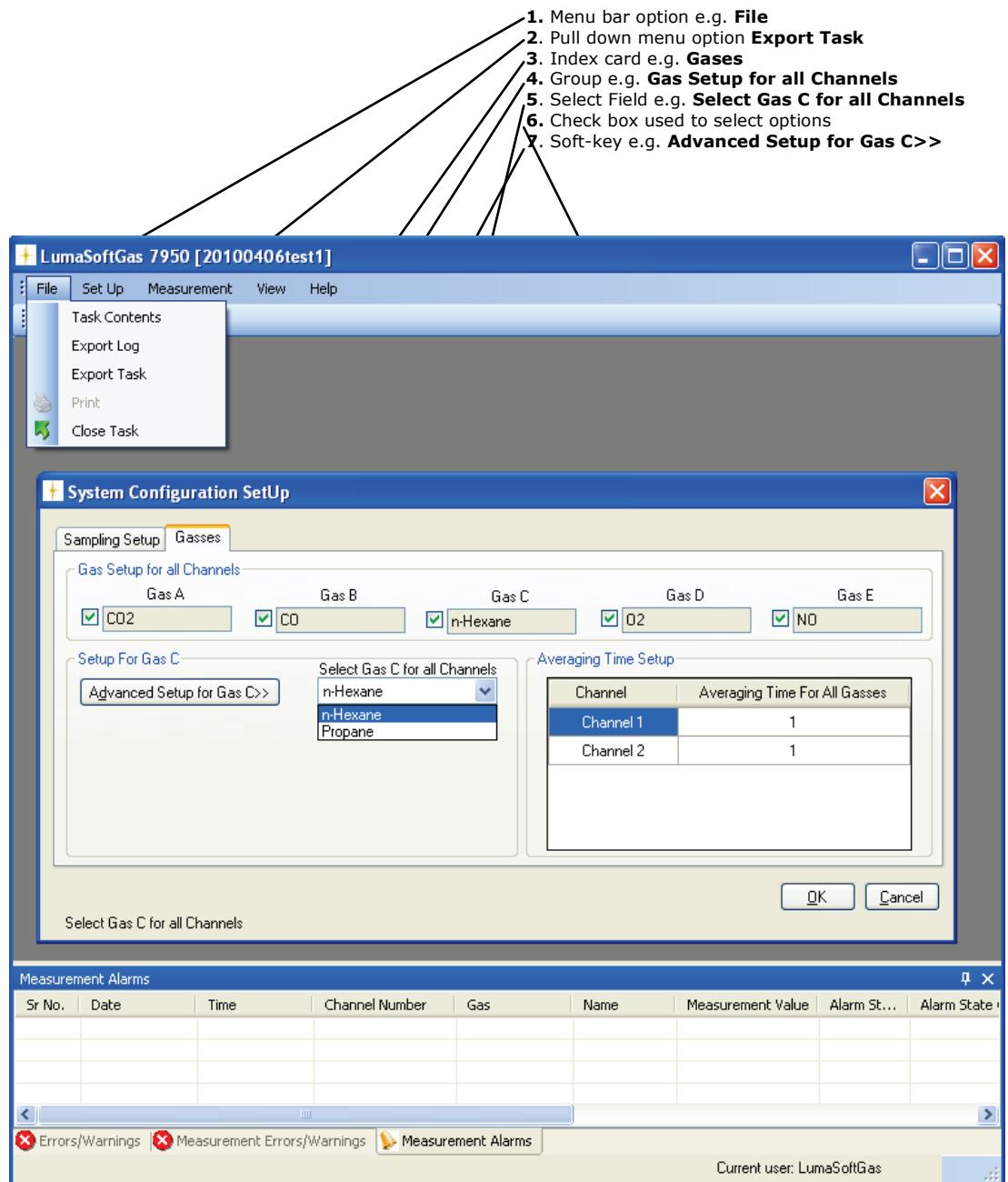
This manual can be used in several ways. The first time users can work their way through the examples in order to get to know the monitoring system. The more experienced users can jump directly to the relevant chapters in order to gain assistance, and experts can use this manual as a reference book by using the index.

The LumaSoft Gas 7950 Software is used as a multi channel monitoring Software for Multi-gas Monitor – INNOVA 1316 system with up to 24 Monitors attached.

NOTE: The LumaSoft Gas 7950 Software requires a license dongle connected to the USB port in order to run.

1.2 Screens

The information displayed on screen is presented in this manual as shown below:



1.3 Tool-bar Icons in LumaSoft Gas Monitoring Software 7950

The instructions in this manual use the pull-down menu paths to describe how operations are possible. However, in many cases, the icons in the tool-bars can be used to speed things up. Top Level toolbars and icons are presented in the following sections.

Other toolbars and icons will be presented in subsequent chapters.

1.3.1 Toolbar: Manage Users



Opens a window dialog to create new users



Change the password for the administrator



Log off administrator



Show information about software version

1.3.2 Toolbar: Main menu



Create new task



Open existing task



Delete task



Log off



Exit program



Show information about software version

1.3.3 Toolbar: Measurement



System configuration



Start measurement



Stop measurement



Close task



Show information about software version

Chapter 2

Preliminary Tasks

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When delivery of the System three very important and preliminary tasks must be completed before starting to operate it:

Install the LumaSoft Gas Software 7950 see [Section 2.1](#).

Connect the Monitors to a PC ([Section 2.2](#)).

Setting-up User Accounts ([Section 2.3](#)).

2.1 Installing the LumaSoft Gas 7950 Monitoring Software

2.1.1 Computer requirements

The Software is targeted to work on a Desktop/Laptop PC environment running a Microsoft Windows Operating System.

Before installing the Software the PC must meet the following minimum requirements:

Processor	Minimum: 1 gigahertz (GHz) Pentium processor
Operating System	Windows XP SP2 Windows Vista (32 bit) Windows 7 (32bit)
RAM	Minimum: 512 MB (2 GB with Windows 7)
Hard Disk	Up to 500 MB of available space may be required.
Display	Minimum: 1024 x 768 high color, 32-bit
Total port connections	1 RS232 port and 1 USB port Or 2 USB ports More ports will be needed when using more than one 1316 Gas Monitor.
Connection to each 1316 Gas Monitor	1 RS-232 port Or 1 USB port
Connection to License dongle	1 USB port for LumaSoft Gas 7950 License Dongle Key (This License Dongle key is delivered by LumaSense)

Table 2.1 Computer requirements

Microsoft Office is required if using the export to Excel file format functionality in LumaSoft Gas.

2.1.2 Installing LumaSoft Gas 7950

The LumaSoft Gas 7950 software is delivered on a CD with an installation program. An additional CD contains an USB driver for the 1316 Gas Monitor. Please refer to [Appendix A](#) how to perform the installation of the LumaSoft Gas software and the additional USB driver for the 1316 Gas Monitor. It is recommended that your system administrator performs the task of installing the LumaSoft Gas program.

After the installation is successfully completed the LumaSense -> LumaSoft Gas program menu is created.

The “LumaSoftGas 7950” program icon (Figure 2.1) is also placed on your desktop for easy access to the program.

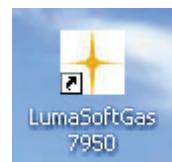


Figure 2.1 LumaSoftGas 7950 desktop shortcut

2.2 Connecting the 1316 Gas Monitor to a PC

The Monitor comes complete with interface cable.

2.2.1 Fitting the RS-232 or USB Cable

Ensure that both the 1316 Gas Monitor and the PC are switched off at the mains. Failure to do so may result in your equipment being damaged.

Locate the serial port at the back of the PC; refer to your PC manual if in doubt.

Push the connector on the cable on to the serial port socket, and secure it firmly using the securing screws.

Locate the output labelled “RS-232” or “USB” at the back of the Monitor. Push the connector at the other end of the RS-232 cable on to this socket, and secure it firmly using the securing screws.

Turn on the PC. Wait for Windows to start up.

The 1316 Gas Monitor can be turned on at the mains.

To connect several (up to 24) Monitors - INNOVA 1316 please refer to [section 2.2.2](#).

2.2.2 Connecting more 1316 Gas Monitors using USB

If more than one 1316 Gas Monitors are to be connected to the PC it is recommended to use USB hub devices between the PC and the available 1316 Gas Monitors.

Many brands of USB hubs are available and at present the common available USB hubs can connect up to 7 USB devices. This means that depending on your number of 1316 Gas Monitors you would require one or more USB hubs.

Please note that the maximum recommended cable length between any USB device (PC, USB hub or USB device) is 5 meter.

In order to extend the cable length between the PC and the 1316 Gas Monitor to 30 meter, an USB extension kit is available.

2.3 Setting-up User Accounts

Setting up user accounts can be performed by the administrator only.

After starting the LumaSoft Gas application the **User Authentication** window opens, where you authenticate yourself as the administrator by specifying the administrator user name and password.

The default administrator password is: *Administrator*



Figure 2.2 Login dialogue window

To create new users you can either select the **Manage User** icon from the toolbar or select **Manage User** from the **User** pull down menu, see Figure 2.3.



Figure 2.3 User pull-down: Manage User

The **User Accounts** window appears showing a list of the current user accounts, see Figure 2.4.

A predefined user account named *LumaSoftGas* with the highest access level appears the first time the **User Accounts** window is opened. The predefined password for the *LumaSoftGas* user is: *lumasoftgas*



Figure 2.4 User Accounts

2.3.1 Add User Account

In order for the administrator to add a new user account the **Add** soft-key can be selected.

The **Add New User** window appears (see Figure 2.5).



Figure 2.5 Add User Account

The **User Name**, **Password** and **Access Level** for the new user account can be specified.

Please note that the **User Name** and **Password** must contain at least 6 characters and must contain no special characters. Only alphabets and numeric characters are allowed [(a-z), (A-Z), (0-9)] for the **User Name** and **Password** (see Figure 2.6).



Figure 2.6 User access Levels

Three different access levels can be specified. The rights for each of the access levels are described below in table 2.2.

Access level	Rights
Super	All expert rights Delete task
Expert	All operator rights Create a new task Make setup of a task Backup/restore a task
Operator	Open a task. Start a measurement Export a task Export log Export/import a task configuration

Table 2.2 User access levels

2.3.2 Edit User Account

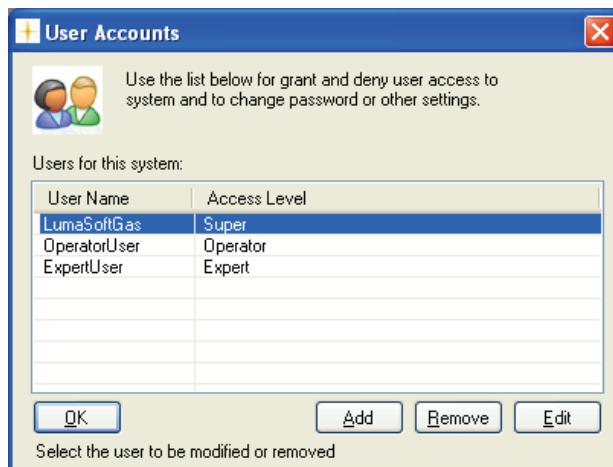


Figure 2.7 User Accounts: Edit

A user account can be edited by the administrator by selecting the **Edit** soft-key in the **User Accounts** window. Before selecting the **Edit** soft-key a **User Name** must be selected in the **User Accounts** window.



Figure 2.8 Edit User Account

The access level can be changed by selecting the **Access Level** field. Also the Password can be changed by selecting the **Reset Password** soft-key. (see Figure 2.8).



Figure 2.9 Reset password dialogue

The **Reset Password** dialogue window appears and the new password for the user account can be entered. (see Figure 2.9).

2.3.3 Remove User Account

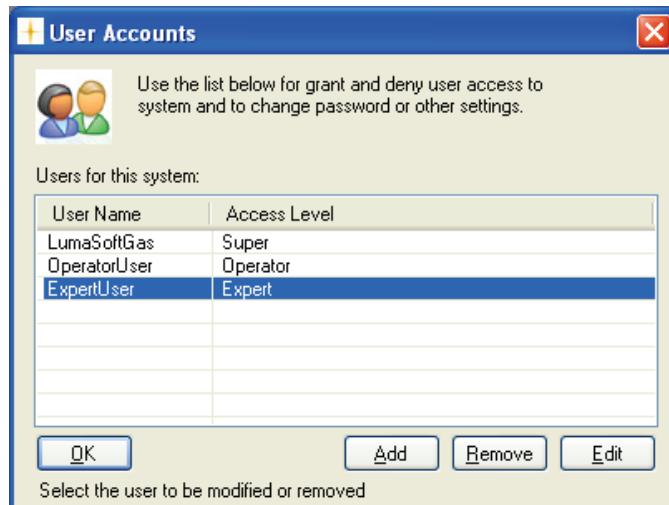


Figure 2.10 User Accounts: Remove

A user account can be removed by selecting the **Remove** soft-key in the **User Accounts** window, see Figure 2.10. Before selecting the **Remove** soft-key a **User Name** must be selected in the **User Accounts** window.

2.3.4 Change password of the administrator

To change the password of the administrator you select the **Change password** icon  from the toolbar or select **Change Password** from the **User** pull down menu. (see Figure 2.11)



Figure 2.11 User pull-down: Change Password

The **Change Password** dialogue window (Figure 2.12) appears and the old and new password for the administrator can be entered.



Figure 2.12 Change Password dialogue

2.4 Download of the latest version

You will find the latest version of the software on

<http://www.lumasense.dk>

To access the download an authorisation (login-name + password) is necessary, which can be obtained from your LumaSense Technologies representative.

Chapter 3

Set-up Measurement Task

March 2011

This chapter will show how to set-up a measurement task.

Please note that measurement set-up is only allowed for users with **Expert** or **Super** access level. (See [Table 2.2](#))

Log in to the software using your username and password.



Figure 3.1 User Authentication

3.1 New task

To create a new task, select the **New Task** drop-down.

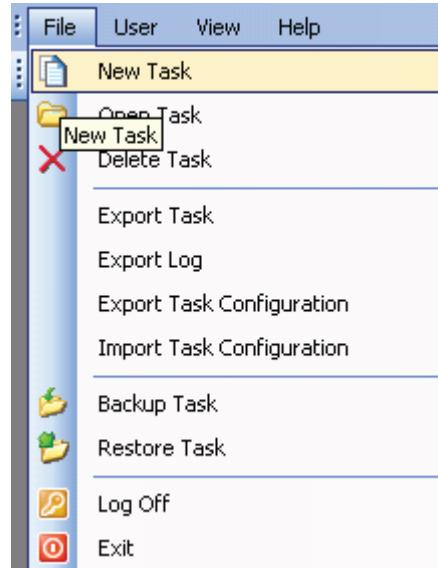


Figure 3.2 File pull-down: New Task

The **New Task** window opens.

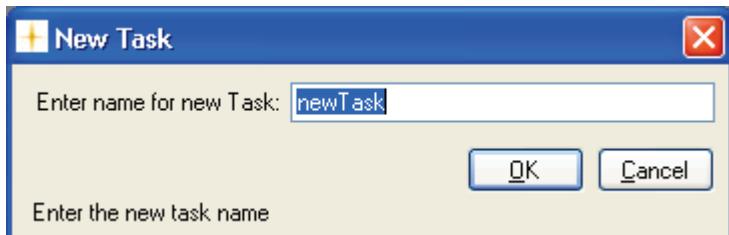


Figure 3.3 The new task window.

Type in a name for the new task and press **OK**.

3.2 Measurement set-up

The set up of a new measurement task is carried out in 3 steps.

3.2.1 System Configuration

This function is used to connect the 1316 Gas Monitor devices and to define the Gases to be measured.

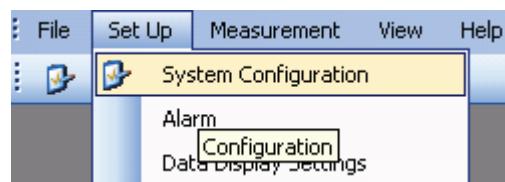


Figure 3.4 Set-up pull-down: System Configuration

Select **System Configuration** in the **Set Up** pull down menu, and the following window will appear.

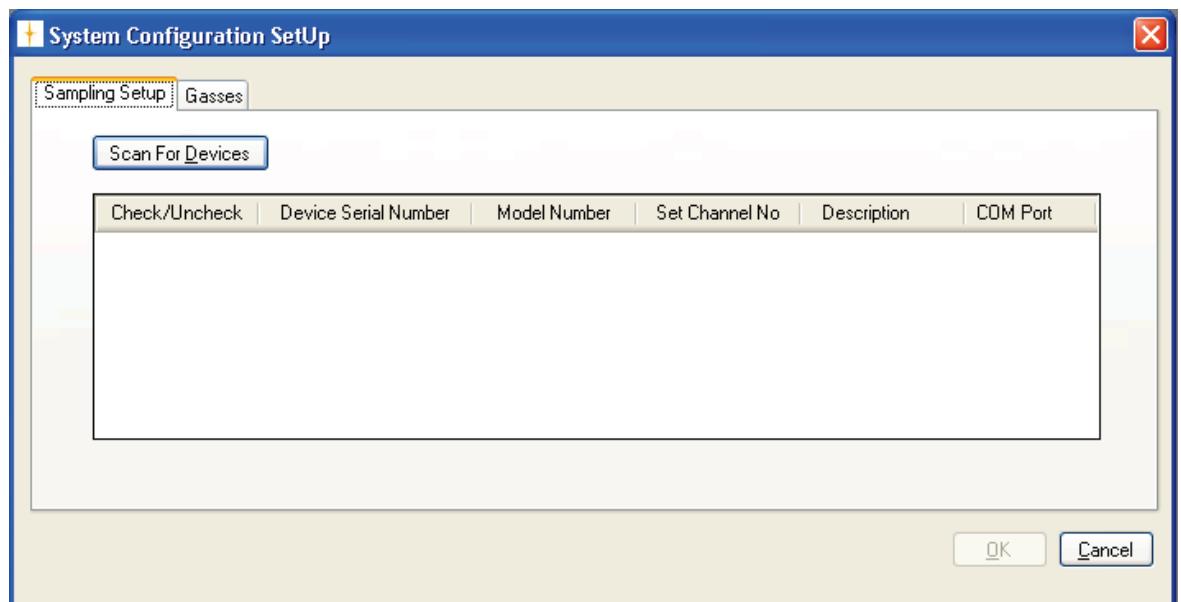


Figure 3.5 System Configuration SetUp

Sampling Setup Index Card

Initially use the **Scan For Devices** soft-key to look for connected 1316 Gas Monitor devices.

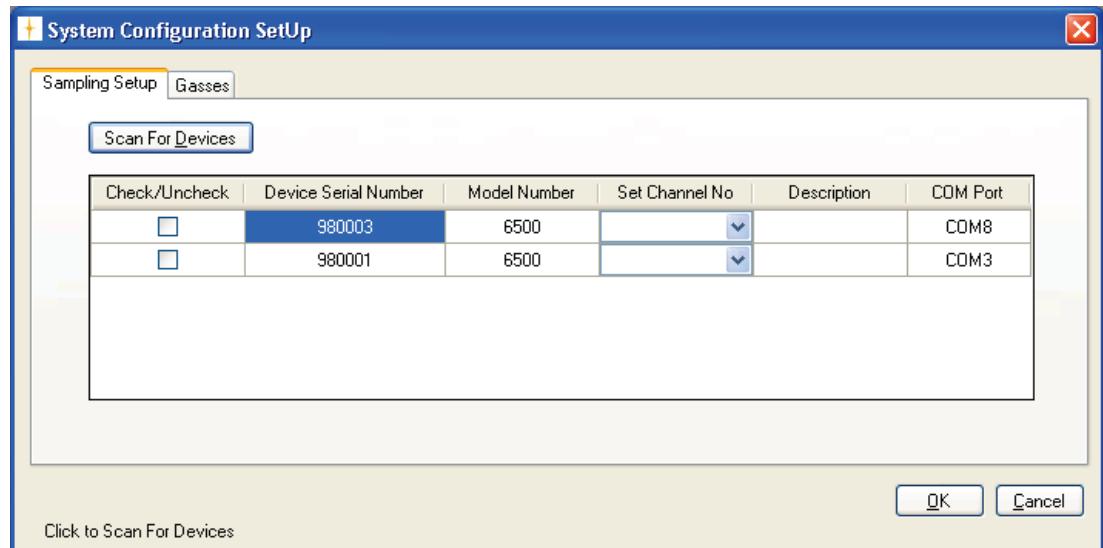


Figure 3.6 Scan For Devices

After the device scan a presentation of the connected 1316 devices is shown (Figure 3.6).

The **Device Serial Number**, **Model Number** and **Com Port** for each 1316 device is listed (Figure 3.6).

Use the **Check/Uncheck** check boxes to select the 1316 devices to be used in the setup (Figure 3.7).

Assign a channel number to each of the selected 1316 devices using the **Set Channel No** field selection (Figure 3.7).

The **Description** text input field could optionally be used to describe the location of the 1316 device (Figure 3.7).

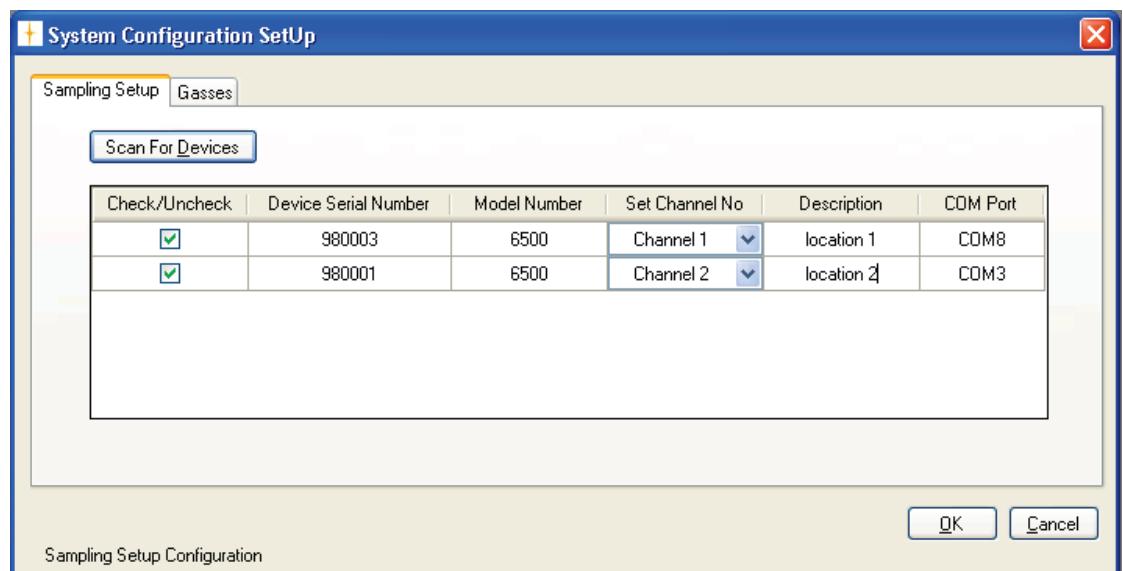


Figure 3.7 System Configuration SetUp

Note that different **Model Number's** cannot be mixed in the same setup, meaning that a 6500 (Hexane/Propane) model, a 6511 (Methane) model or a 6554 (Freon) model cannot be used together in the same setup, but rather be used individually in different setups.

Gases Index Card

After finishing the Sampling setup the next step is to select the **Gases** index card in order to choose the Gases to be measured. (Figure 3.8)

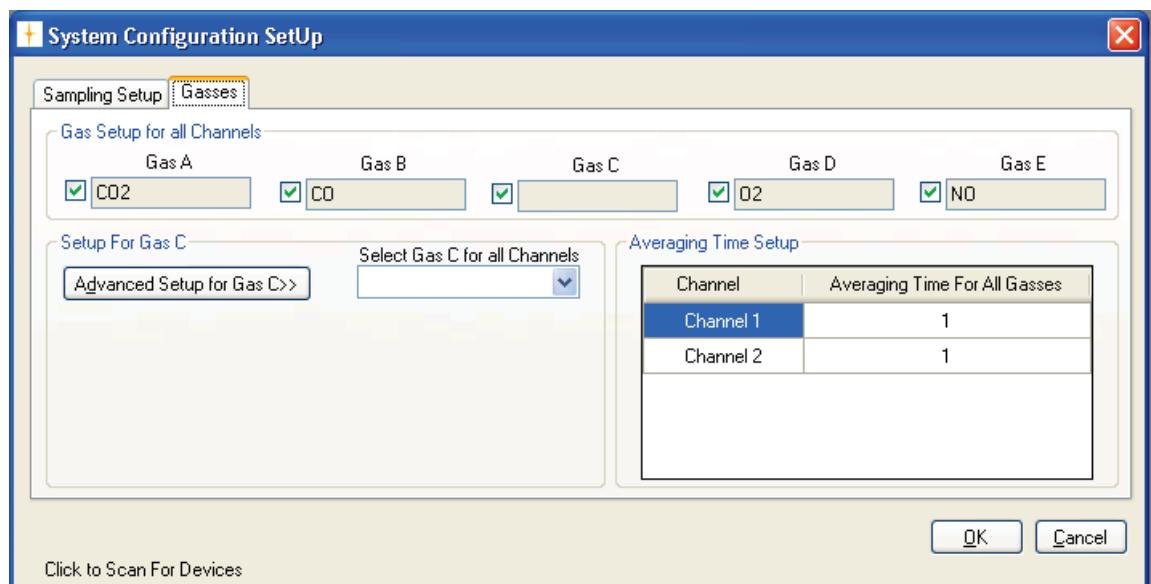


Figure 3.8 Gases setup

By default the 5 different Gases A to E are checked, meaning that all the 5 Gases will be measured (Figure 3.8). Any of the 5 Gases can be unchecked in case one or more of the 5 Gases is not to be measured.

If your 1316 device(s) is not equipped with an O₂ (Oxygen) sensor or a NO sensor the appropriate check boxes should be unchecked.

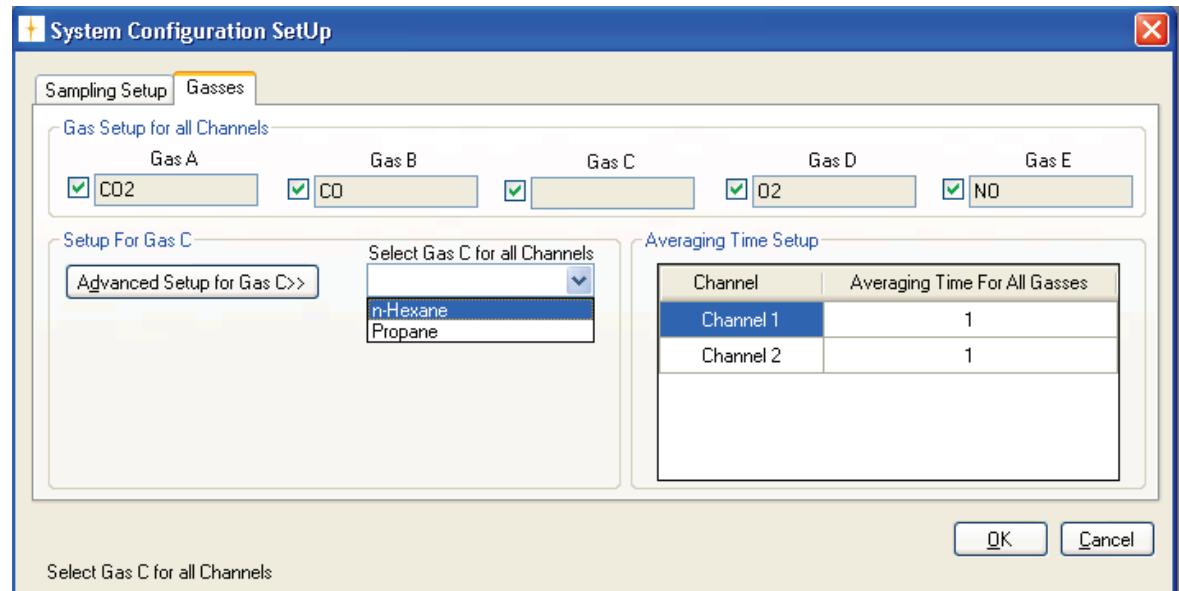


Figure 3.9 Select Gas C

For some models (like 6500, 6554) a selection of the gas C is available (Figure 3.9).

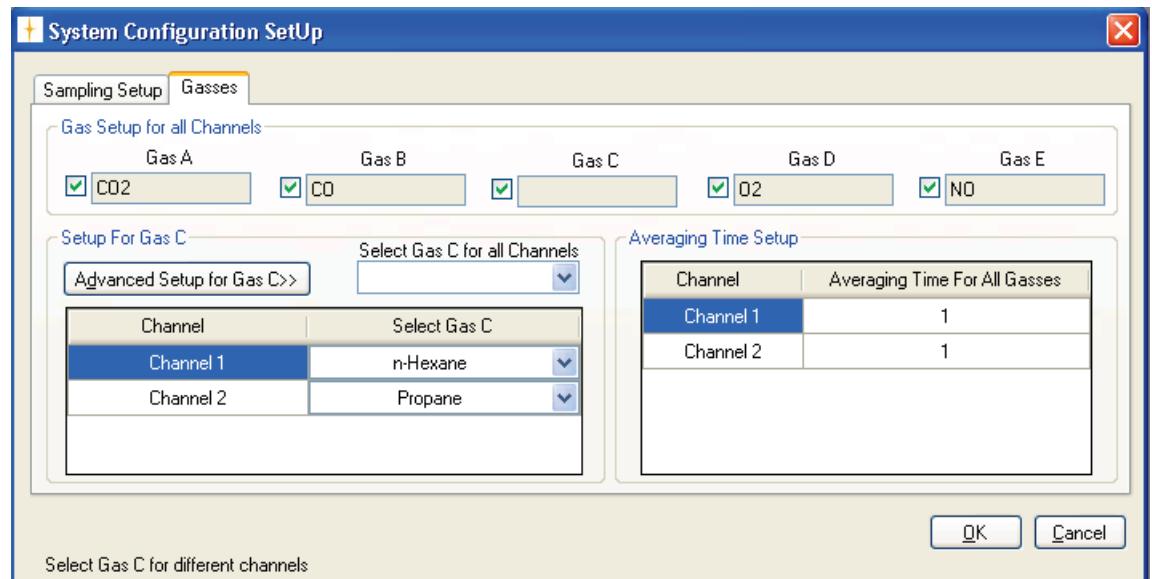


Figure 3.10 Advanced Setup for Gas C

By using the **Advanced Setup for Gas C>>** soft-key every channel can be set to measure individual Gases (Figure 3.10).

In the **Averaging Time Setup** group, the text fields in the **Averaging Time For All Gases** column, can be used to define the channel (device) averaging time in seconds (Figure 3.11). This averaging time can be set individual for every channel (device).

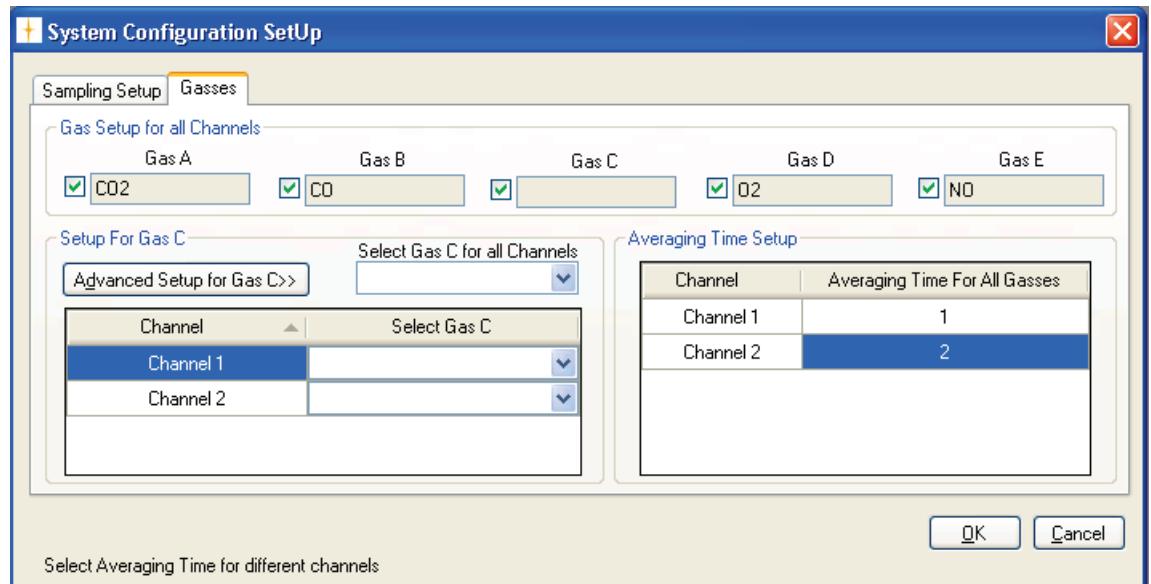


Figure 3.11 Averaging Time Setup

Press the OK soft-key to finish the system configuration setup.

3.2.2 Alarms

This function is used to define software alarms for each gas when the concentration reaches either a minimum or a maximum level.

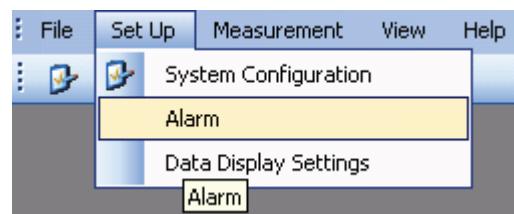


Figure 3.12 Set-up pull-down: Alarm

Select **Alarm** in the **Set Up** pull down menu, and the following window will appear, Figure 3.13.

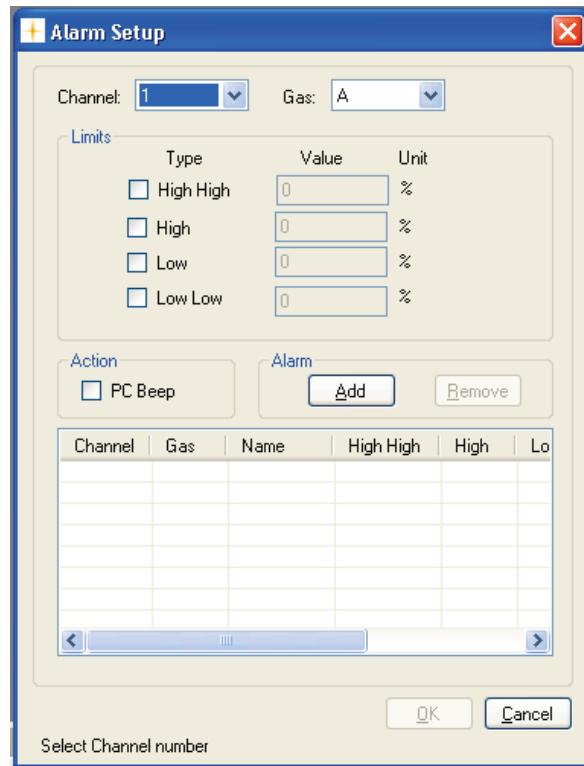


Figure 3.13 Set up of alarm for specific gases

First select the channel number in the field selection box for which the alarm should be configured, as shown in Figure 3.14.

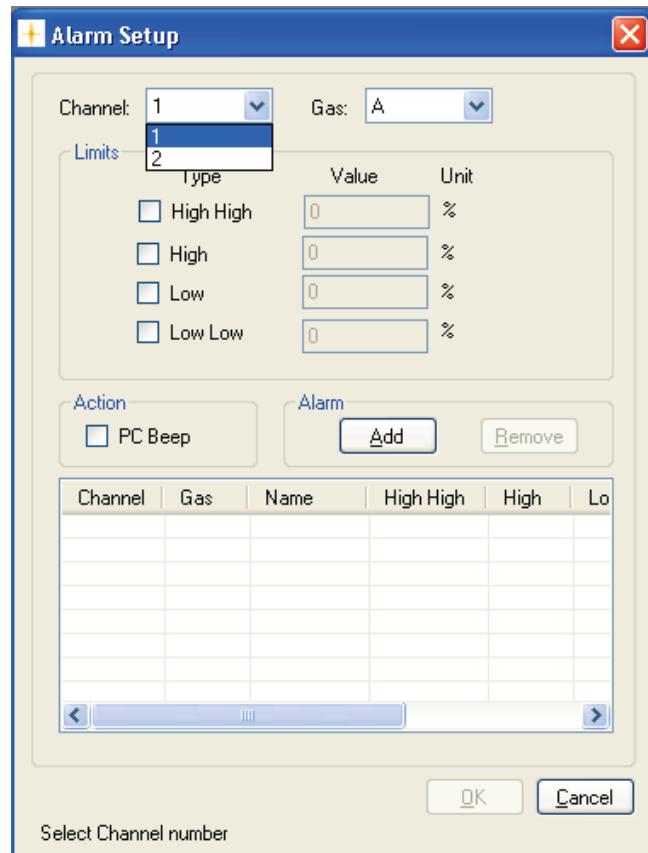


Figure 3.14 Select a channel number in the left pull down box.

Then select the gas for which the alarm should be configured in the **Gas** selection box, see Figure 3.15.

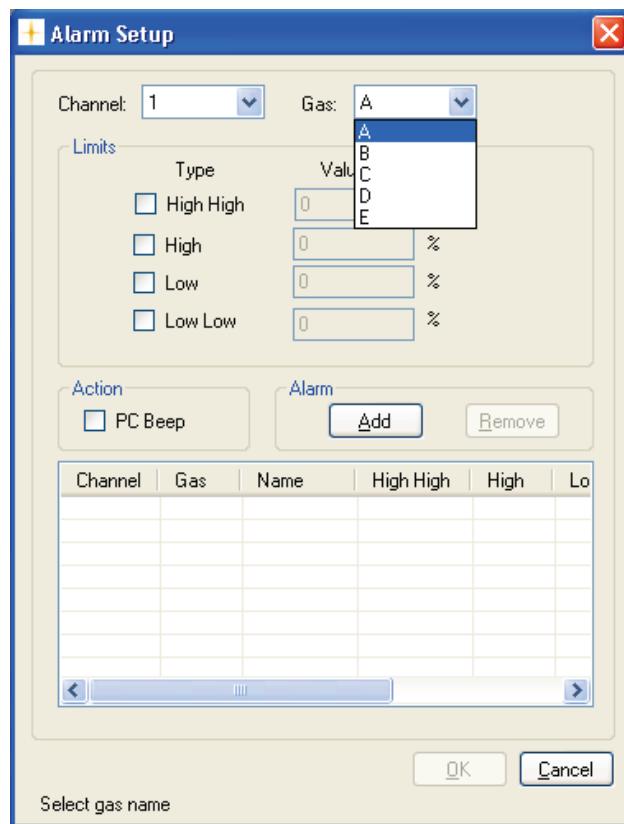


Figure 3.15 Select for which gas the alarm should be configured

There are four different alarms which can be configured: **Low**, **Low Low**, **High** and **High High**. The **Low** alarm can be set to give a warning that the concentration of the gas is dropping below the normal level. The **Low Low** alarm can then be configured to give a warning whenever the gas concentration drops below the lowest allowable concentration. The **High** and the **High High** alarm levels are set to give a warning for a concentration above a certain limit and that the maximum allowable concentration is exceeded.

To set up an alarm first select between the four mentioned alarms and type in the concentration value, see Figure 3.16.

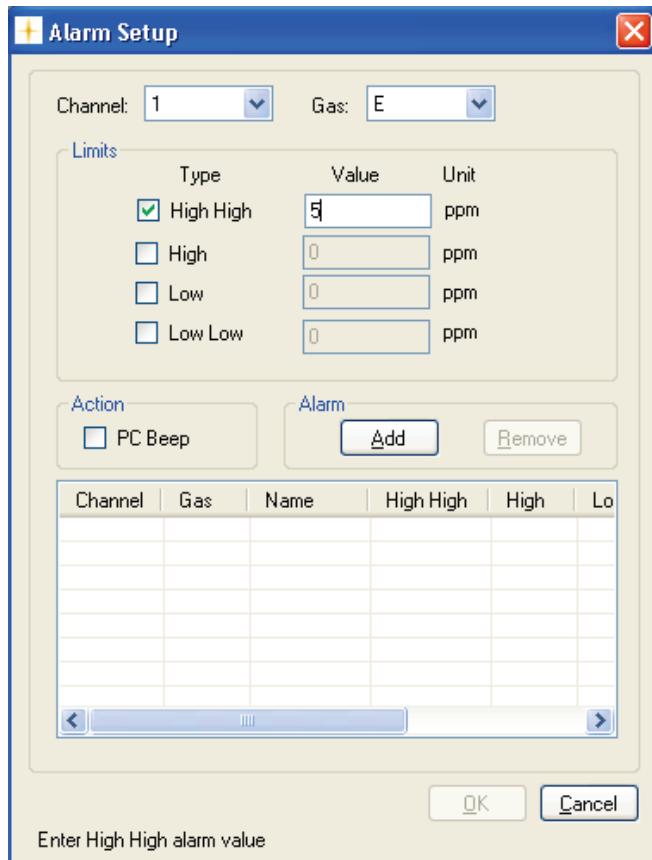


Figure 3.16 Select a type of alarm and type in a value for the gas concentration

When the alarms have been configured choose whether there should be a PC beep when the alarm level is reached. Press **Add** soft-key to add the configured alarms and then **OK** to proceed. (See Figure 3.17)

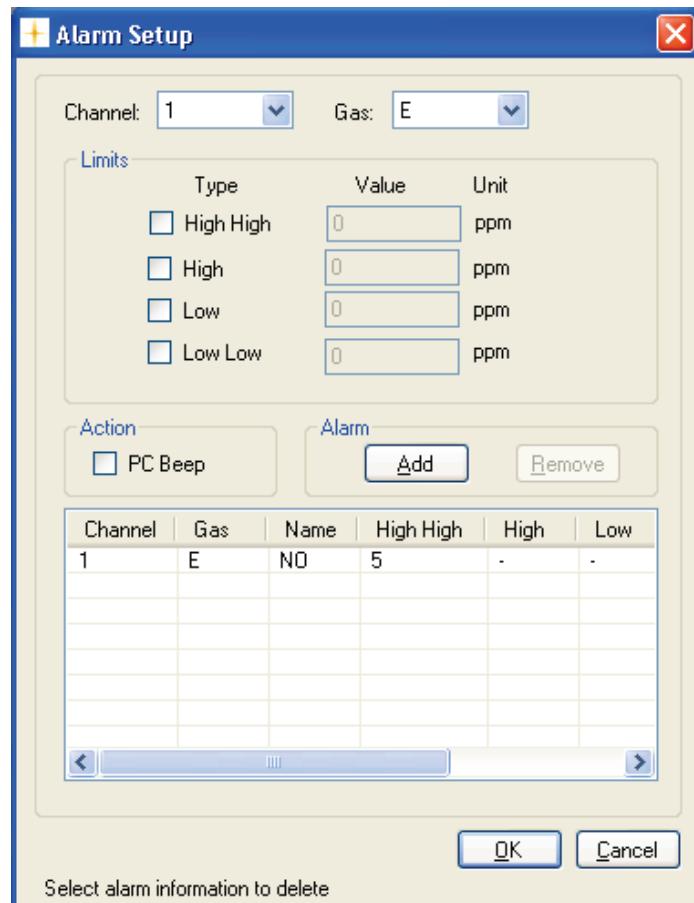


Figure 3.17 Press Add to add the configured alarms

To remove a gas from the alarm list highlight the gas using a mouse click and press the **Remove** soft-key. (See Figure 3.18)

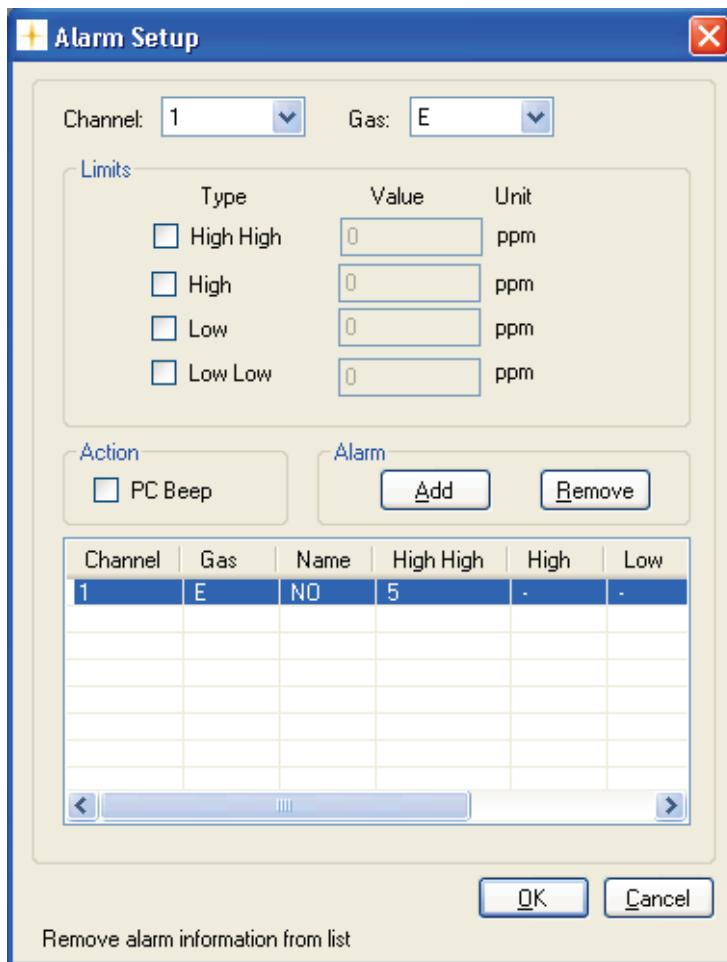


Figure 3.18 Press Add to add the configured alarms

3.2.3 Data Display Settings

This function is used to specify the resampling of the measurement data to be presented in the numeric or graphical displays.

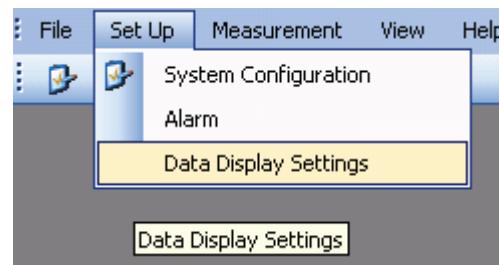


Figure 3.19 Set-up pull-down: Data Display Settings

Select **Data Display Settings** in the **Set Up** pull down menu, and the following window will appear, Figure 3.20.

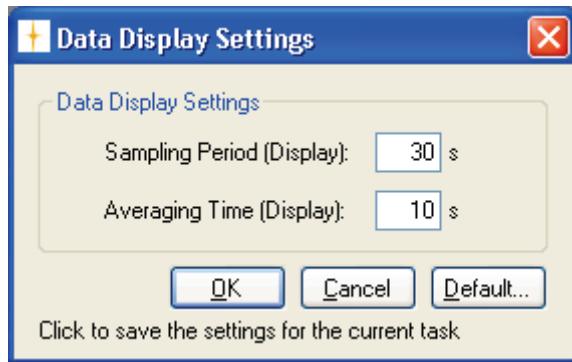


Figure 3.20 Data Display Settings window

The **Sampling Period** value defines the time interval in seconds between displayed measurement values.

The **Averaging Time** value defines how much time of the **Sampling Period**, which should be used when calculating the averaged measurement value.

The default values for the **Sampling Period** is 30 seconds and for the **Averaging Time** it is 10 seconds. This means that every half a minute a resampled value is presented in the numeric and graphical displays and the value is based on an average of the last 10 seconds in the 30 second sampling period.

The maximum allowed value for the **Sampling Period** is 900 seconds (15 minutes). Accordingly the **Averaging Time** maximum value is 900 seconds and also must be equal or lower than the **Sampling Period**.

The lowest possible value for the **Sampling Period** and the **Averaging Time** is 1 second.

The unsampled measurement data is stored in a database with a 1 second resolution.

Chapter 4

Perform Measurement

March 2011

This chapter shows how to

- perform a measurement task. ([Section 4.1](#))
- present the measurement data in graphic display. ([Section 4.2](#))
- additional graphic display features. ([Section 4.3](#))
- present the measurement data in numeric display. ([Section 4.4](#))
- set user events. ([Sections 4.3.1](#) and [4.4.3](#))
- print graphic and numeric displays. ([Sections 4.3.2](#) and [4.4.4](#))
- display historical data. ([Section 4.3.3](#))
- view measurement alarms. ([Section 4.5](#))
- export measurement data. ([Section 4.6](#))
- view error and warnings. ([Section 4.7](#))
- export log ([Section 4.8](#))

4.1 Measurement start and stop

If a measurement task is not open, select **File** and **Open Task**, see Figure 4.1 or select  from the task bar.

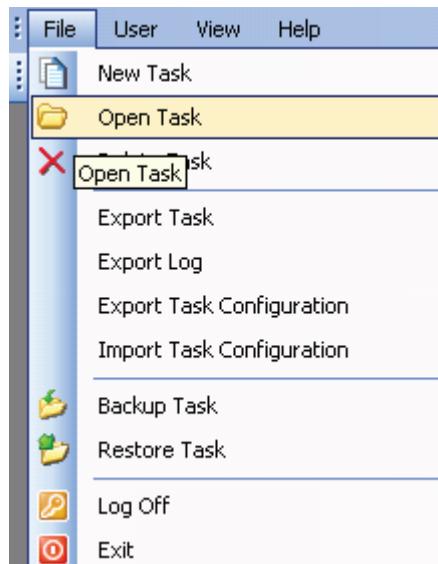


Figure 4.1 File pull-down: Open Task

Select an existing task to open, see Figure 4.2.

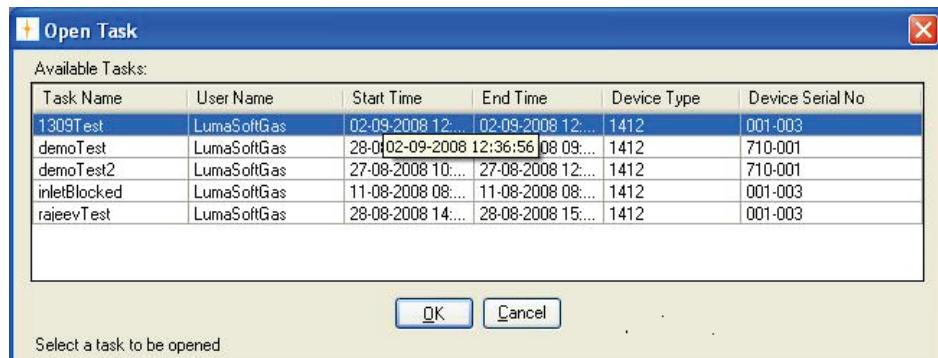


Figure 4.2 Open Task window

4.1.1 Start Measurement

To start the measurement, select **Measurement** and **Start**, see Figure 4.3, or press the icon with the green arrow  in the task bar.

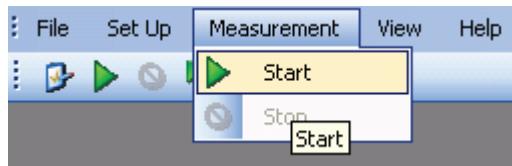


Figure 4.3 Measurement pull-down: Start

The measurement can be started immediately (**Now** option) or at a specific starting time by using the option: **Start at**, see Figure 4.4.

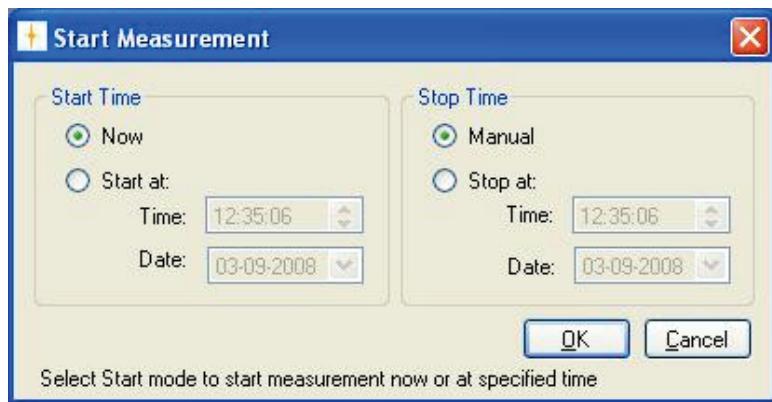


Figure 4.4 Start and stop measurement task

The measurement can be stopped manually (**Manual** option) or at a fixed time using the **Stop at** option. (See Figure 4.24)

A measurement task can be stopped and then restarted at your convenience.

4.1.2 Stop Measurement

To stop the measurement, select **Measurement** and **Stop**, see Figure 4.5, or press the  icon in the task bar.



Figure 4.5 Measurement pull-down: Stop

4.2 Graphical Window

To display measurement data graphically select **Graphical Window** in the **View** pull-down menu. (See Figure 4.6)

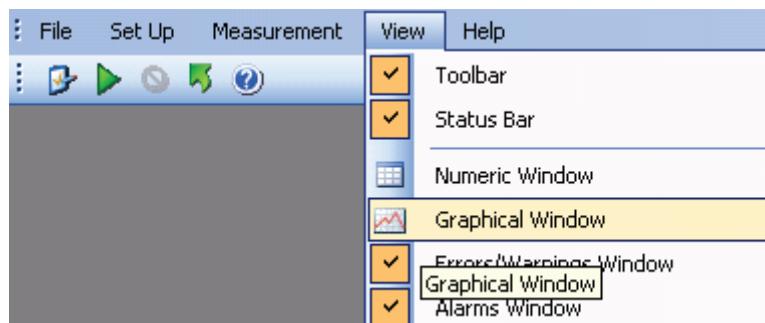


Figure 4.6 View pull-down: Graphical Window

4.2.1 Configuration of the graphical window

In the **Configuration** window select if the data should be presented as a **Real Time Graph**, while measurement is in progress, or **Historical Graph**, see Figure 4.7.

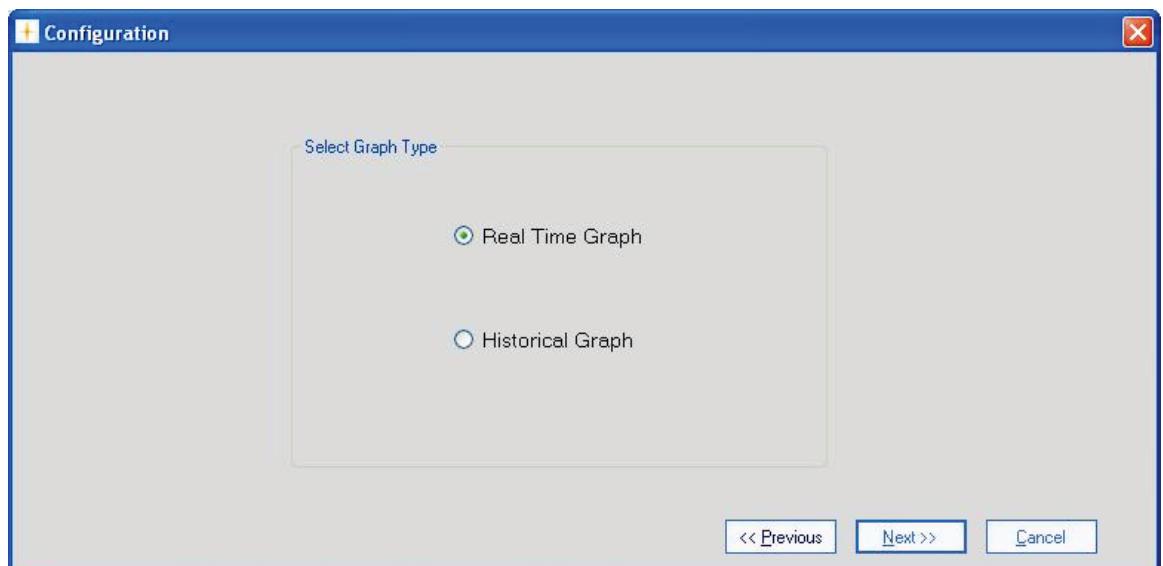


Figure 4.7 Configuration window

Real Time Graph means that measurement data will be plotted as they arrive from the Monitor.

Historical Graph means viewing previously measured data

Select **Real Time Graph** and press **Next** to continue.

4.2.2 Select Gases

In the gas **Graph Configuration** window, see Figure 4.8, select which of the measured gases to be included in the Graph and press the right going arrow.

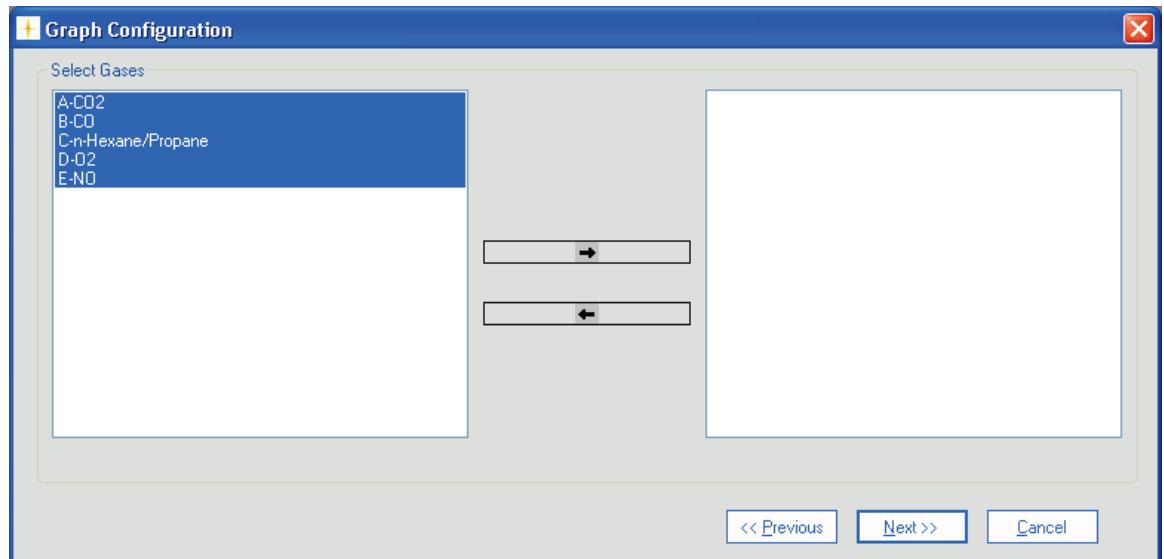


Figure 4.8 Graph Configuration window

To select more Gases in one press the Ctrl key while selecting. To select individual Gases press the Shift key while selecting. When the gases have been chosen they will appear in the right window, see Figure 4.9. Press **Next** to proceed.

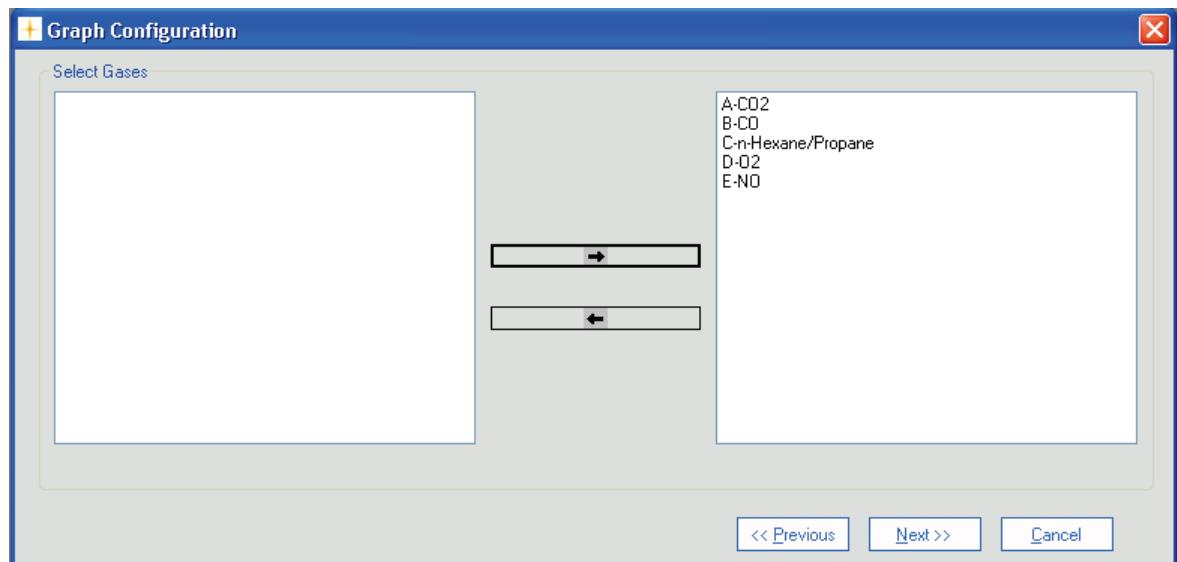


Figure 4.9 Graph Configuration window, selected gases

4.2.3 Configuration of curves

CurveColor

Each of the filters have a default selected curve color, see Figure 4.10.

To change the color of the curves press the colored square in the **CurveColor** column.

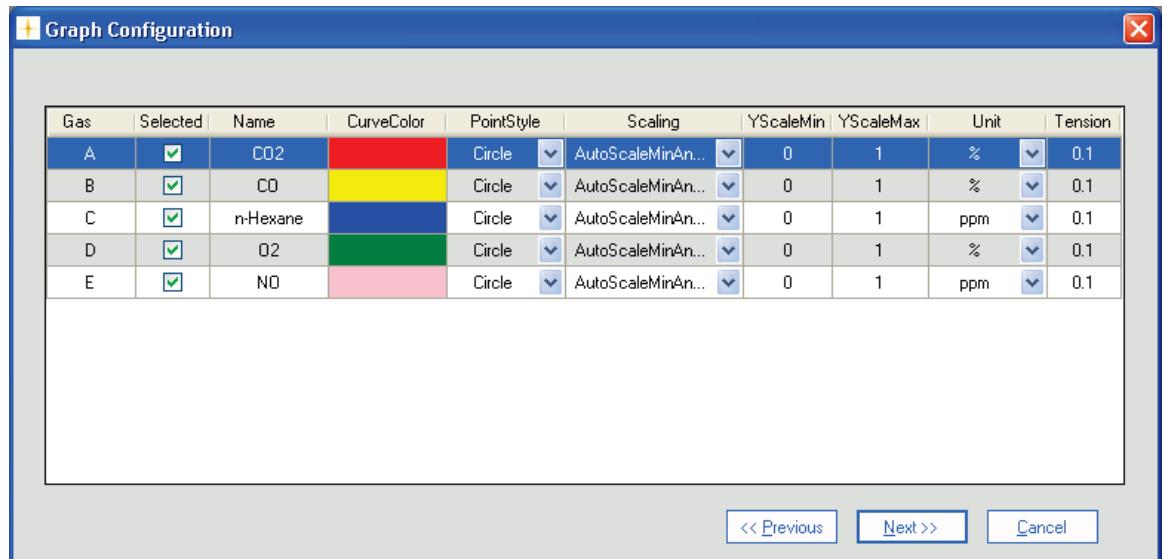


Figure 4.10 Graph Configuration window, curve color

Select a color for the curve in the **Color** window, see Figure 4.11.



Figure 4.11 Color window

Repeat the procedure for all the Gases.

PointStyle

It is possible to change the style of the plotted measurement points to **Square** or **Circle** using the field selection in the **Point Style** column.

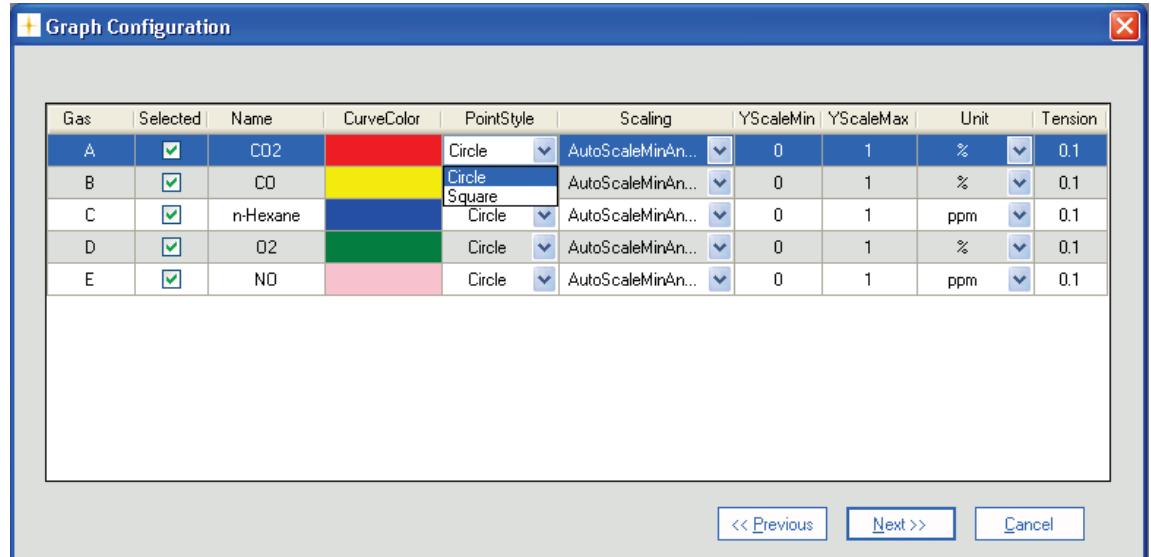


Figure 4.12 Graph Configuration window, point style

Scaling

The scaling of the Y-axis can be set to **AutoScaleMinAndMax**, **AutoScaleMax** or **AutoScaleOff** in the field selection individually for each filter in the **Scaling** column. The possible scaling types are described in [Table 4.1](#).

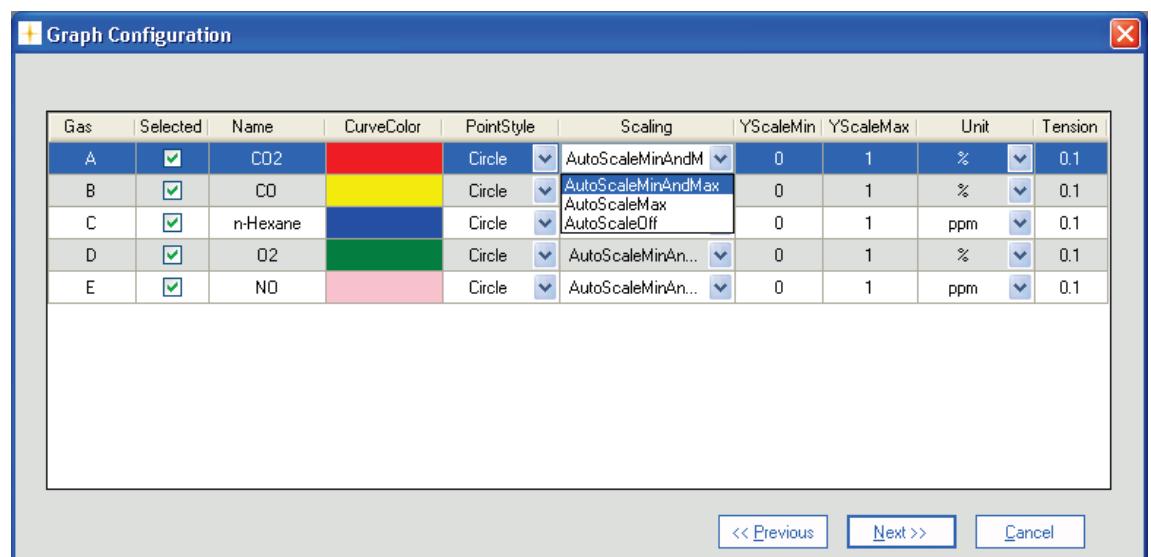


Figure 4.13 Graph Configuration window, scaling

AutoScaleMinAndMax	The scale will cover from the lowest measurement value to the highest measured value, i.e. all measurement points will be visible on the graph.
AutoScaleMax	The Y-axis will begin at 0 and the maximum value depends on the highest measured value.
AutoScaleOff	The user defines both minimum and maximum values for the Y scale manually, by defining YScalemin and YScaleMax . This can be used to view measurement points in a particular range.

Table 4.1 Scaling types of the Y-axis

Units

In the **Unit** column the unit is preselected according to the 1316 model. The **Unit** column shows in which unit the gas will be displayed in the graphical window.

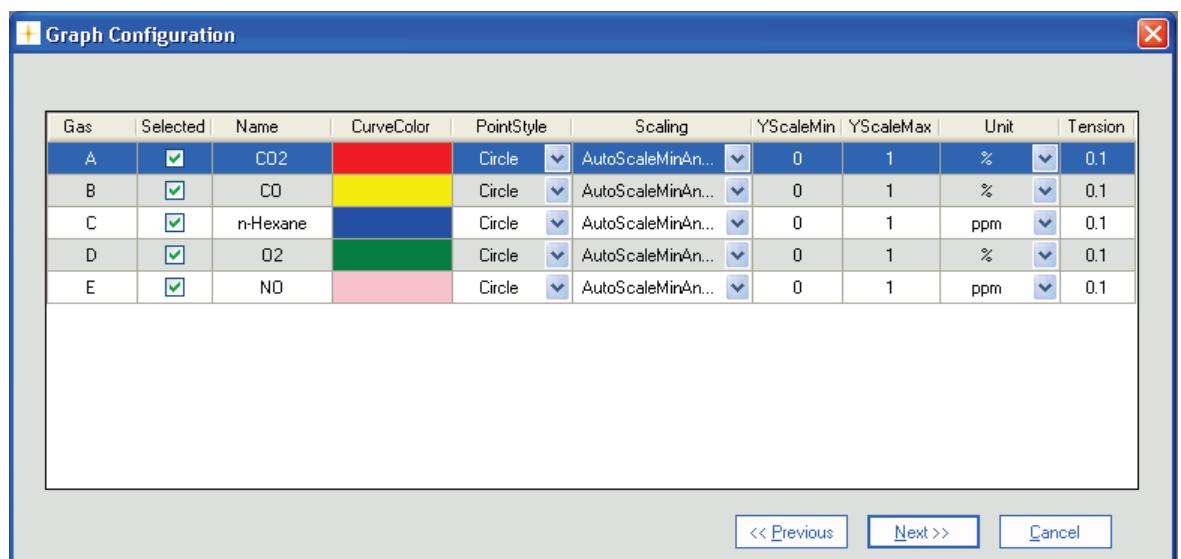


Figure 4.14 Graph Configuration window, Unit

Tension

By adjusting the **Tension** it is defined how soft/hard the lines between the measurement points should be. If the tension is set to 0 the points are connected by straight lines. The highest possible value is 1, which makes the maximum interpolated curves based on the available measuring points.

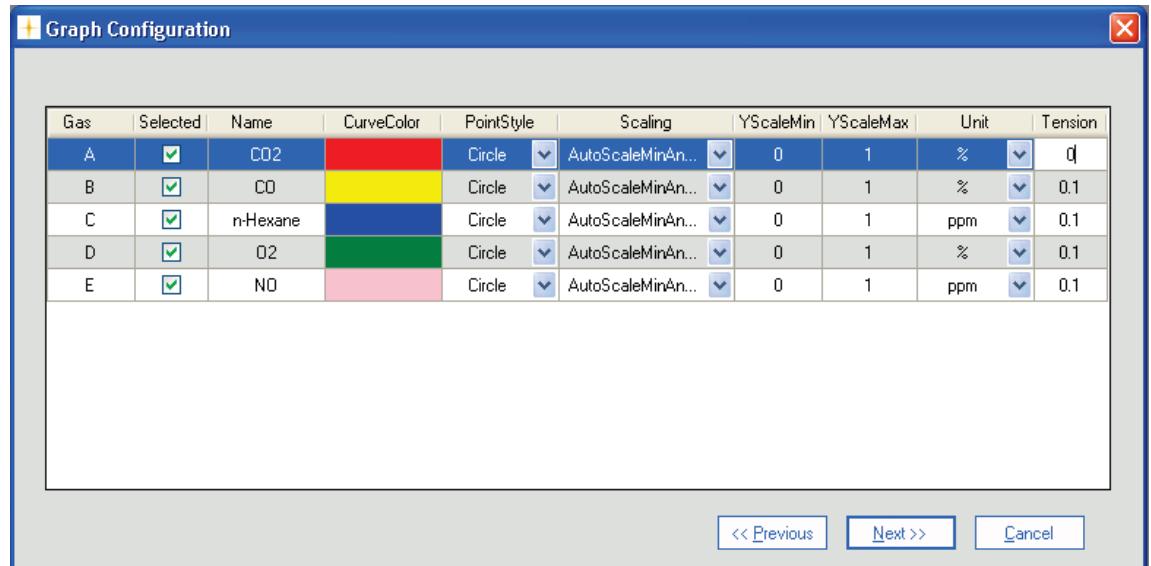


Figure 4.15 Graph Configuration window, Tension

When all the settings has been adjusted press **Next** to proceed.

4.2.4 Configuration of the Graph Window

In this configuration window the graph properties are configured. The graph can be given a title by entering a name in the **Graph Title** field. (See Figure 4.16).

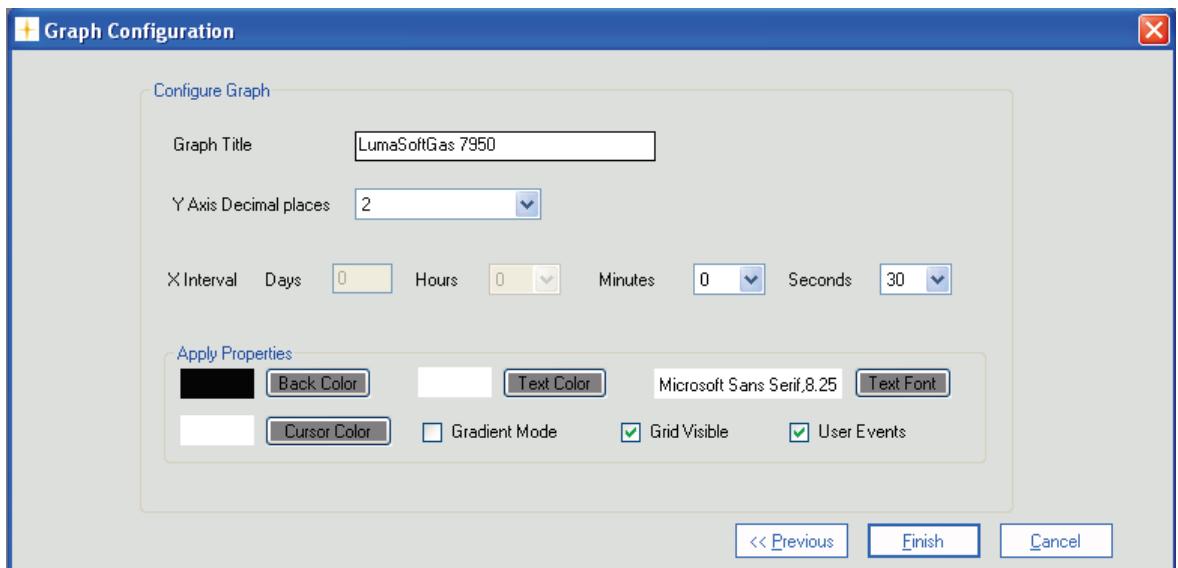


Figure 4.16 Graph Configuration window, Configure Graph

The number of decimals on the measured values can be selected in the field selection: **Y Axis Decimal places**.

The time interval (**X Interval**) on the X-axis can be set to days, hours, minutes or seconds.

Back Color, **Cursor Color**, **Text Color** and **Font** etc. can be changed by pressing the appropriate grey squares.

Gradient Mode gives a shading of a dark background color.

Grid Visible turns on/off the grid.

User Events turns on/off the display of user events (see [Section 4.3.1](#)).

Press **Finish** when the configuration is completed.

The Graphical Window is shown in figure 4.17.

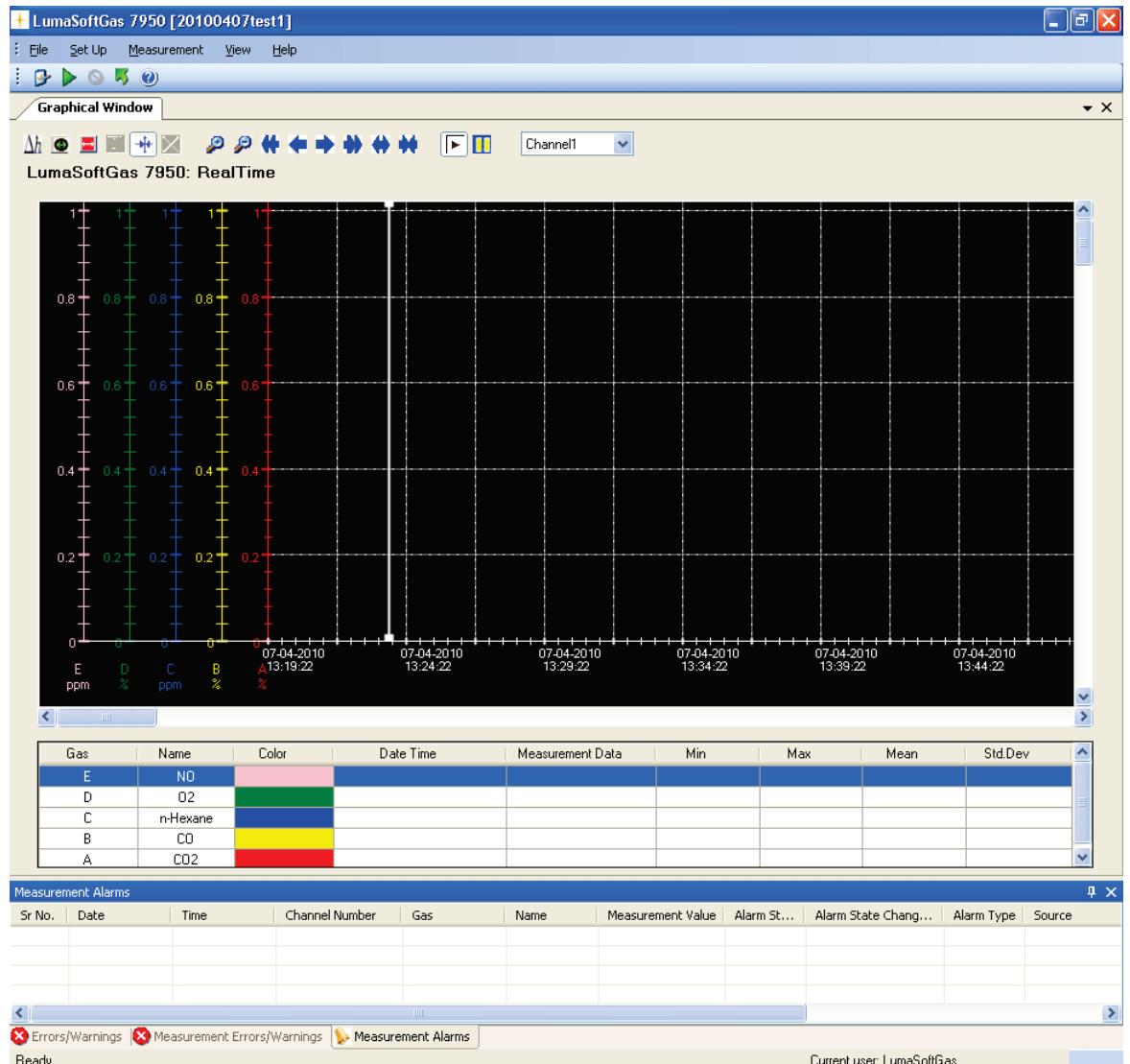


Figure 4.17 The graphical window

Changing the configuration

To change any of the above settings after the configuration is ended press the right mouse button while the cursor is placed in the graph area. Select **Setup** (see Figure 4.18) and the **Configuration** window will appear, see [Figure 4.5](#).

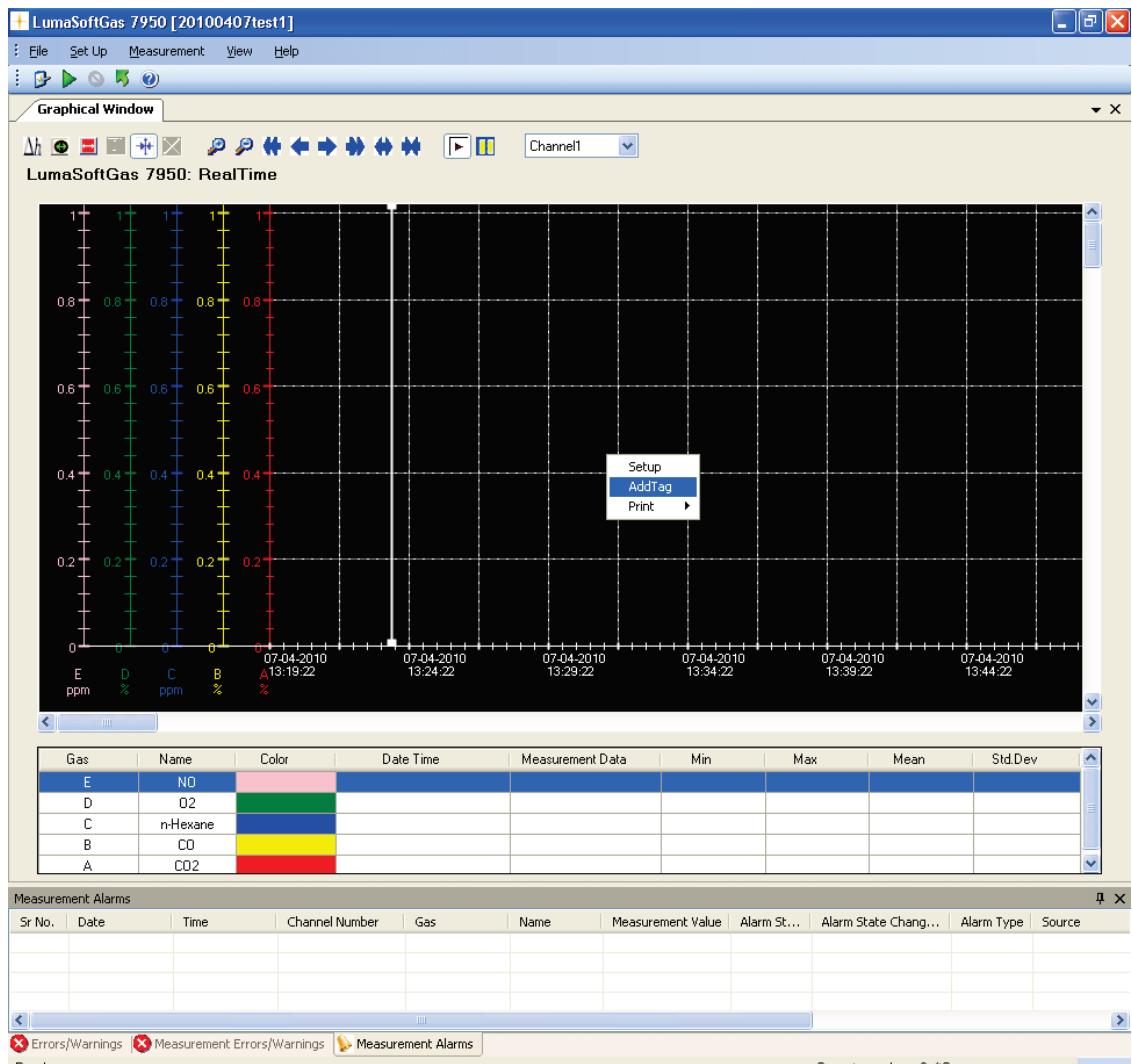


Figure 4.18 Graphical window : Change configuration

To add a curve for a measured gas, which has not been previously added, press the right mouse button while the cursor is placed in the graph area and select **AddTag**. (See Figure 4.18)

4.2.5 The Graphical Window

The graphical window shows the measurement data in a graph. Each gas in the Monitor has its own axis on the graph, see Figure 4.13. Below the graph a window containing a list of the measured gases, and statistics performed from all obtained measurement data (**Min**, **Max**, **Mean** and **Std. Deviation**) is shown. The bottom window is the **Errors and Warnings** and **Alarm** window. The number of curves displayed, their color and style are defined by the user as described in [Section 4.2.1](#), [Section 4.2.2](#), [Section 4.2.3](#) and [Section 4.2.4](#).

The user can toggle between the **Errors/Warnings**, **Measurement Errors/Warnings** and **Measurement Alarm** windows. The **Errors/Warnings** window will register if any errors have occurred while

running the measurement. The window can be hidden by pressing the **Auto Hide** icon, or by selecting the **Errors/Warnings Window** in the **View** drop down menu, see Figure 4.19.

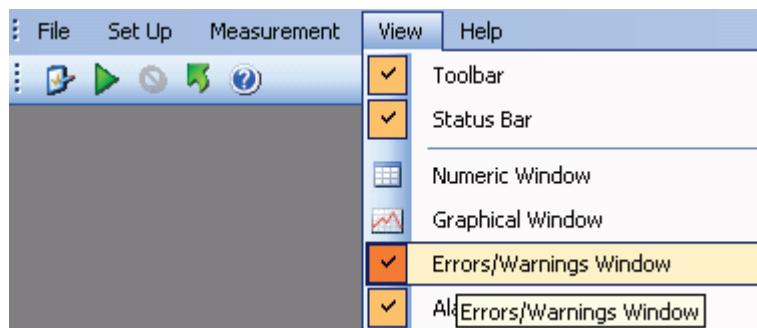


Figure 4.19 View pull-down: Errors/Warnings Window

4.2.6 Functions in the Graphical Window

In the top of the Graphical window the Icon Tool Bar is displayed.



The tool bar makes it easier to handle and process the obtained measurement data.

The function behind each icon will be explained in the following section.

Find Difference Δh

The function Δh , will calculate the difference in the value for two data points on the same gas curve. Press the Δh icon and then select the two data points with mouse clicks. In the top right corner the difference between the two measurements will be displayed, see Figure 4.20.

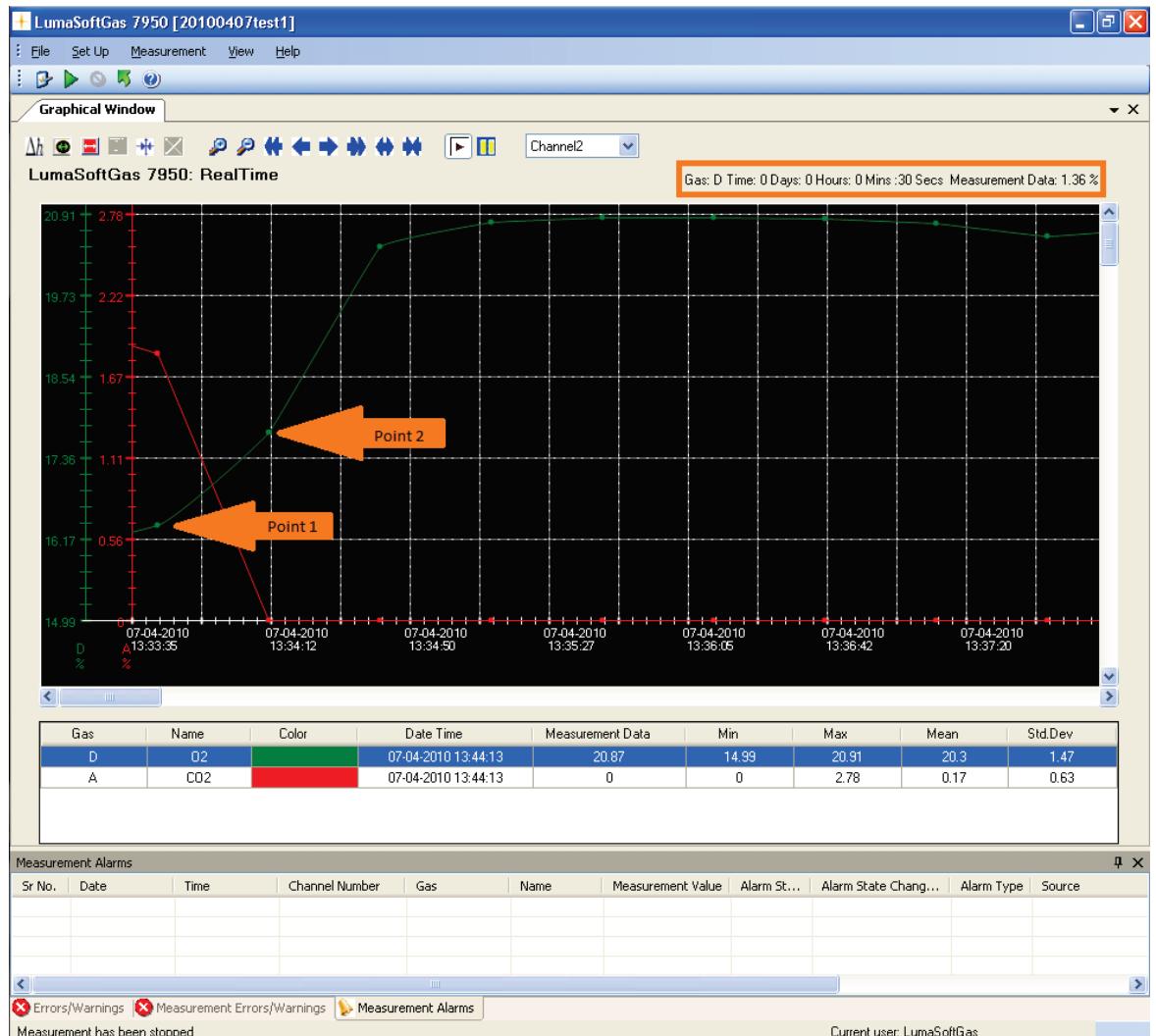


Figure 4.20 Graphical window : Find Difference Δh

Historical Data Plotting

Historical data plotting is described in [Section 4.3.3](#).

X Delta Cursor

Press the **X Delta Cursor** icon and select two points to determine the difference in time. A light red area will appear between the two points and the time difference will be displayed, see Figure 4.16. When using this function the statistics shown in the middle window are calculated for the measurement points within the chosen interval and will be marked with red text color, see Figure 4.21.

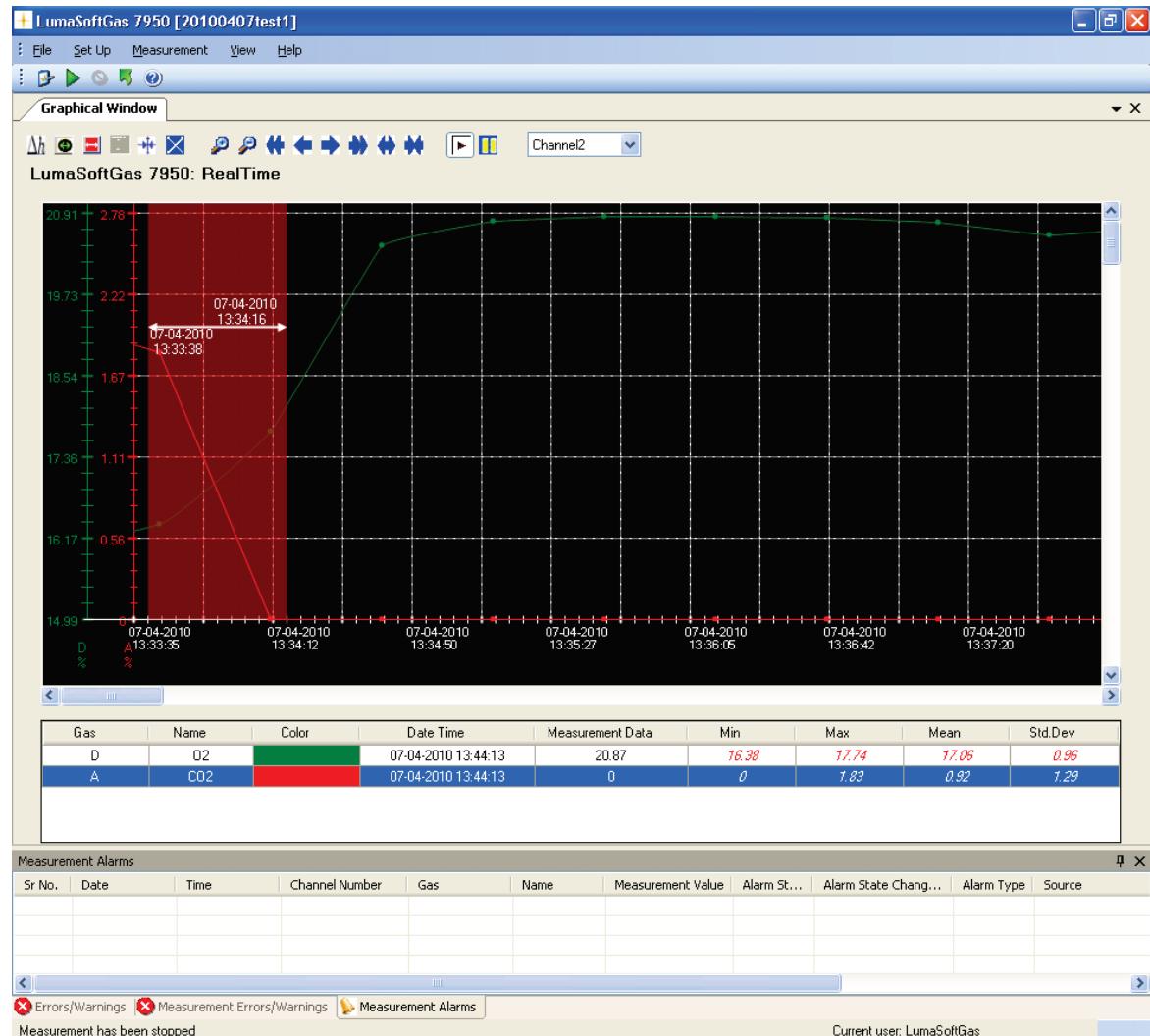


Figure 4.21 Graphical window : X Delta Cursor

Cursor On/Off

The **Cursor** function will give the user opportunity to see the exact measurement values for any given measurement point. Drag the cursor to a specific measurement point and the values will be displayed in colored boxes, see Figure 4.22.

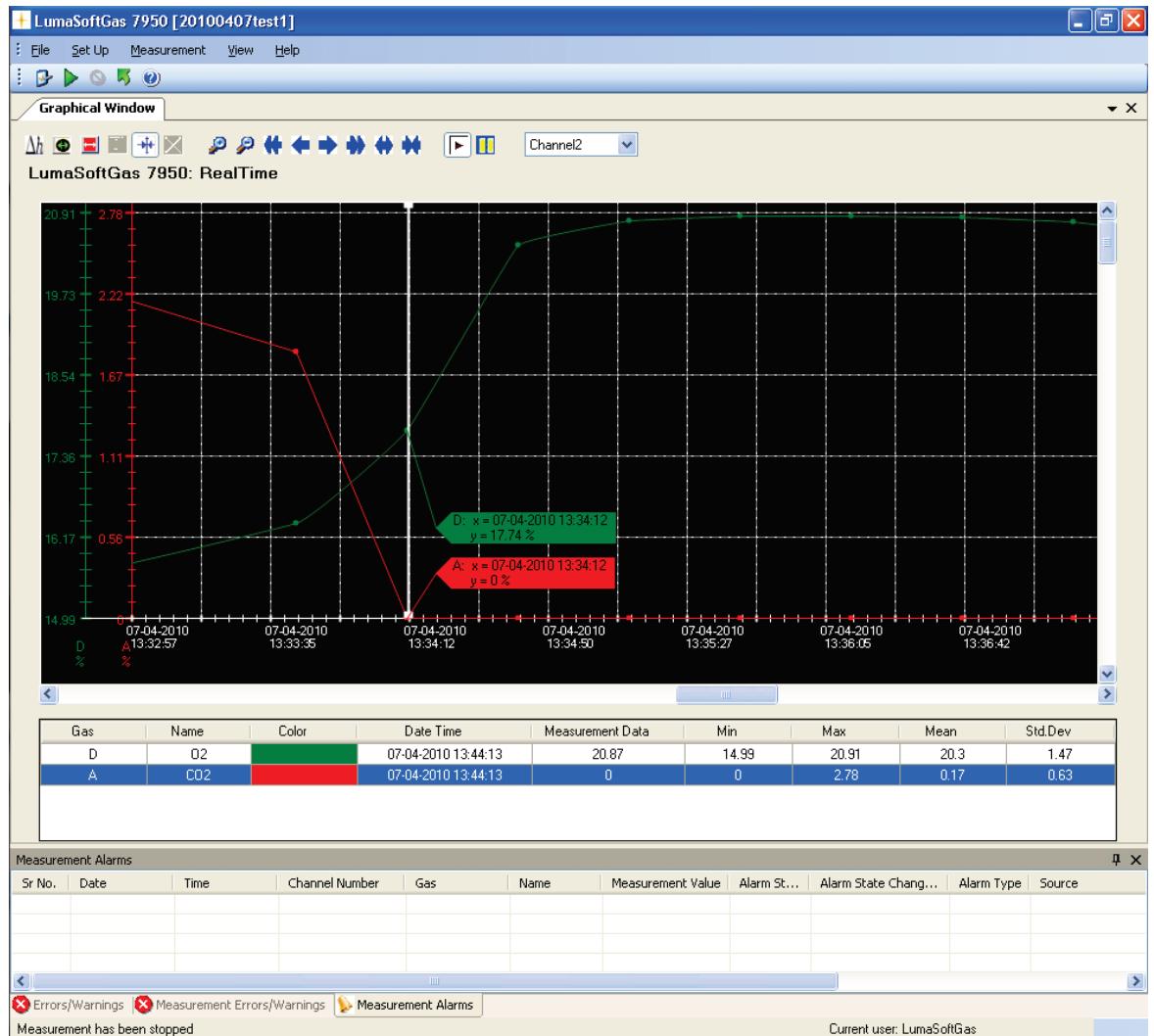


Figure 4.22 Graphical window : Cursor function

Delete Delta Cursor

A **X or Y Delta Cursor** can be deleted by pressing this icon . The window below will appear and the desired cursor can be selected and deleted by pressing **Delete**, see Figure 4.23.

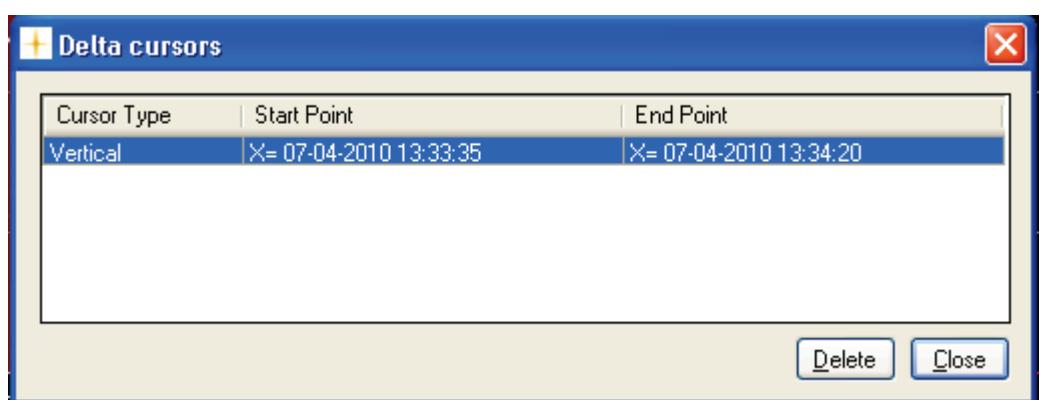


Figure 4.23 Delta cursors window : Delete

Zoom

This function enables the user to zoom in and out on areas of particular interest on the graph by using the two icons: **Zoom In**  and **Zoom Out** .

Scroll

If a measurement is running over a longer period of time, these icons can be used to scroll the x axis forth  or  and back  or .

Expand/Compress

These two icons can be used to expand and compress the x-axis. This function can be used to get a better visibility of measurement points lying very close to each other.

Start/Pause measurement

These two icons allow the user to start  and pause  the display of new measurements points at any time.

Select Channel

This select field box enables switching between the channels which are used to draw air samples, allowing viewing all obtained measurement data for a specific channel, see Figure 4.24.

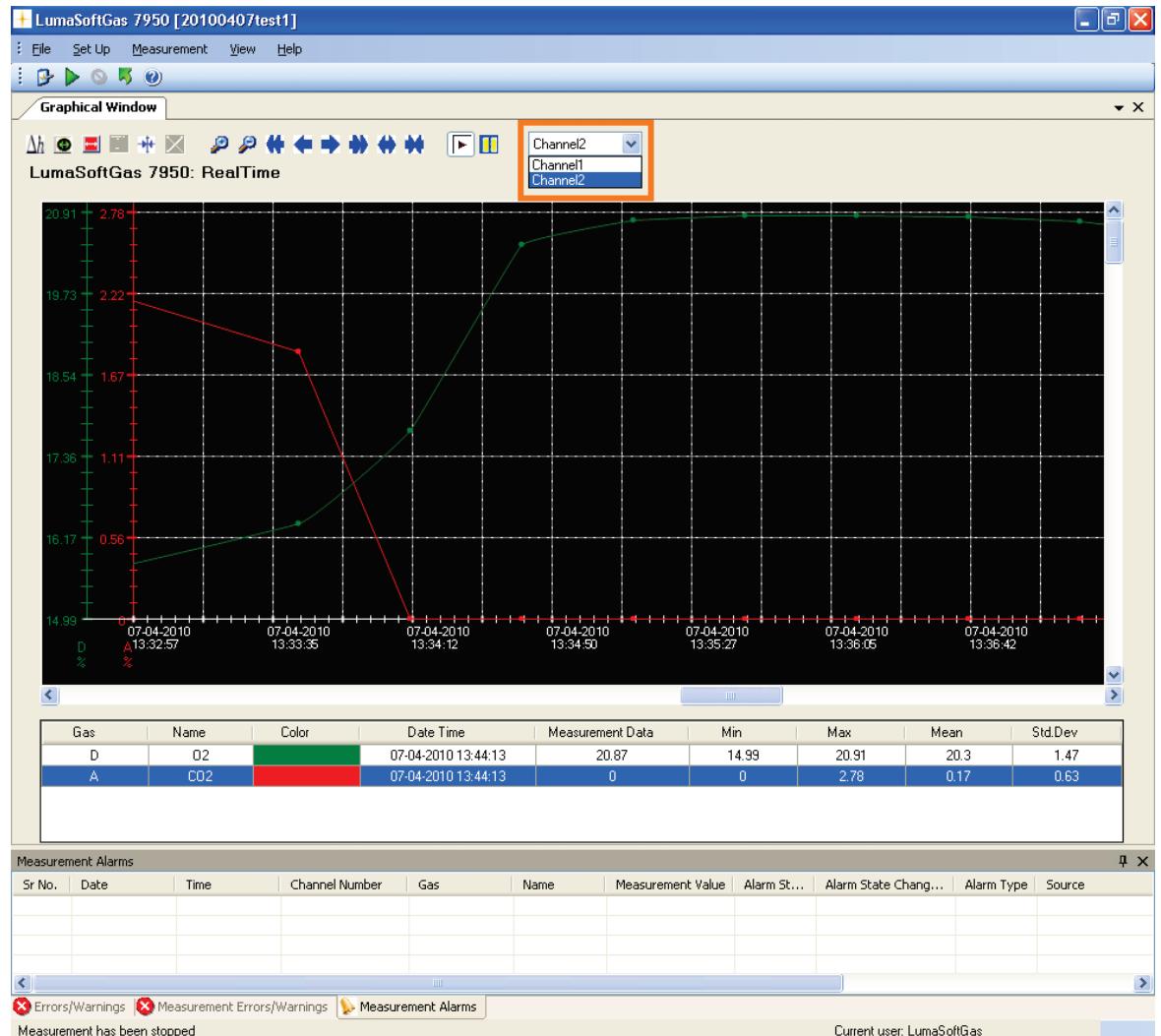


Figure 4.24 Graphical window : Select channel field

Status bar

The status bar in the lower left displays measurement progress, like running status or every half an hour the intermittent zero calibration lasting half a minute, see Figure 4.25.

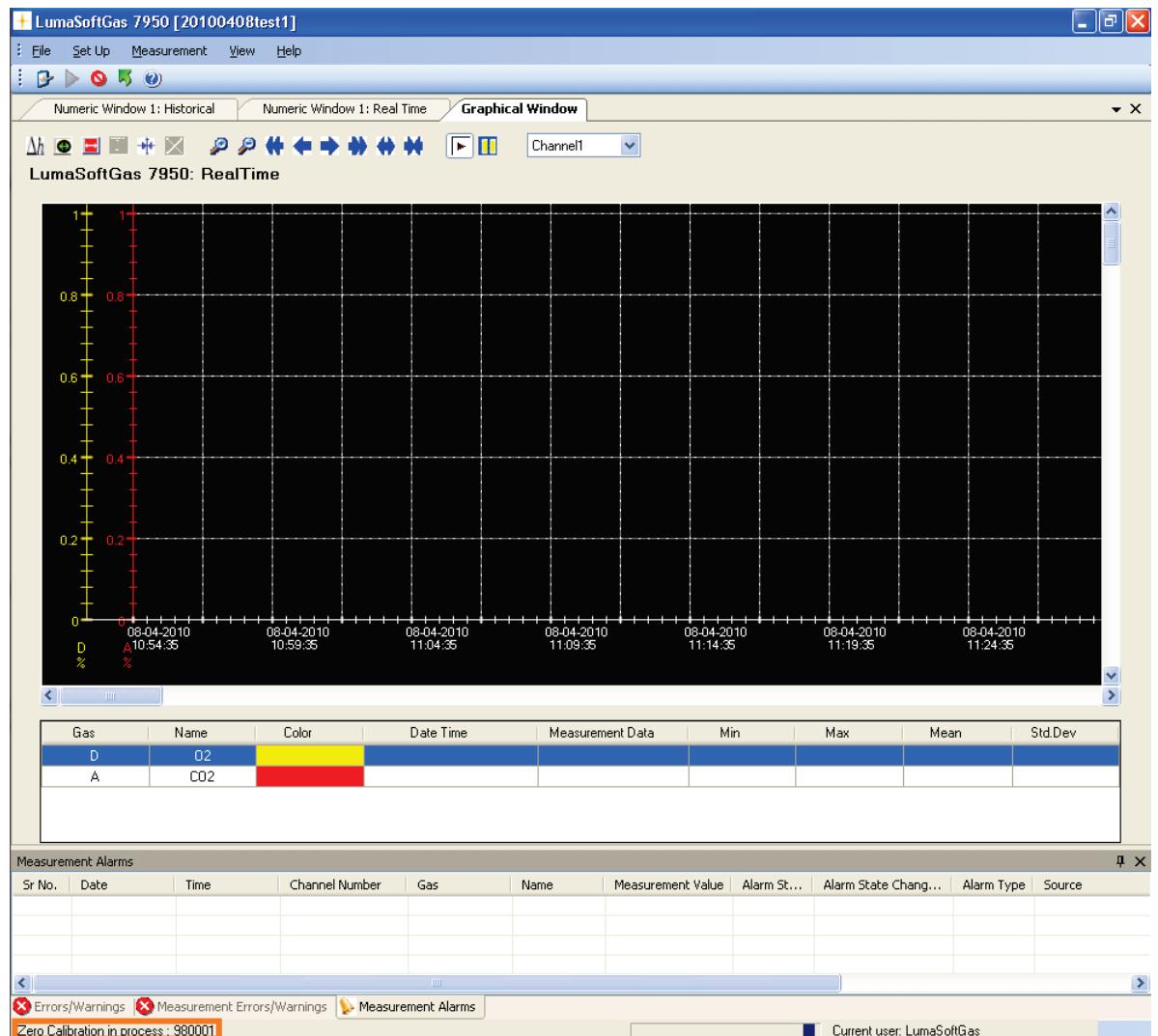


Figure 4.25 Graphical window : Status bar

4.3 Additional features in the graphical window

4.3.1 User Events in the graphical window

If an event occurs or a changed condition happened during a measurement task, it is possible to indicate this event by using the **User Event** function.

To insert a user event press the right mouse button while placing the cursor on the measurement point where the event should be added and select **Add UserEvent**, see Figure 4.26.

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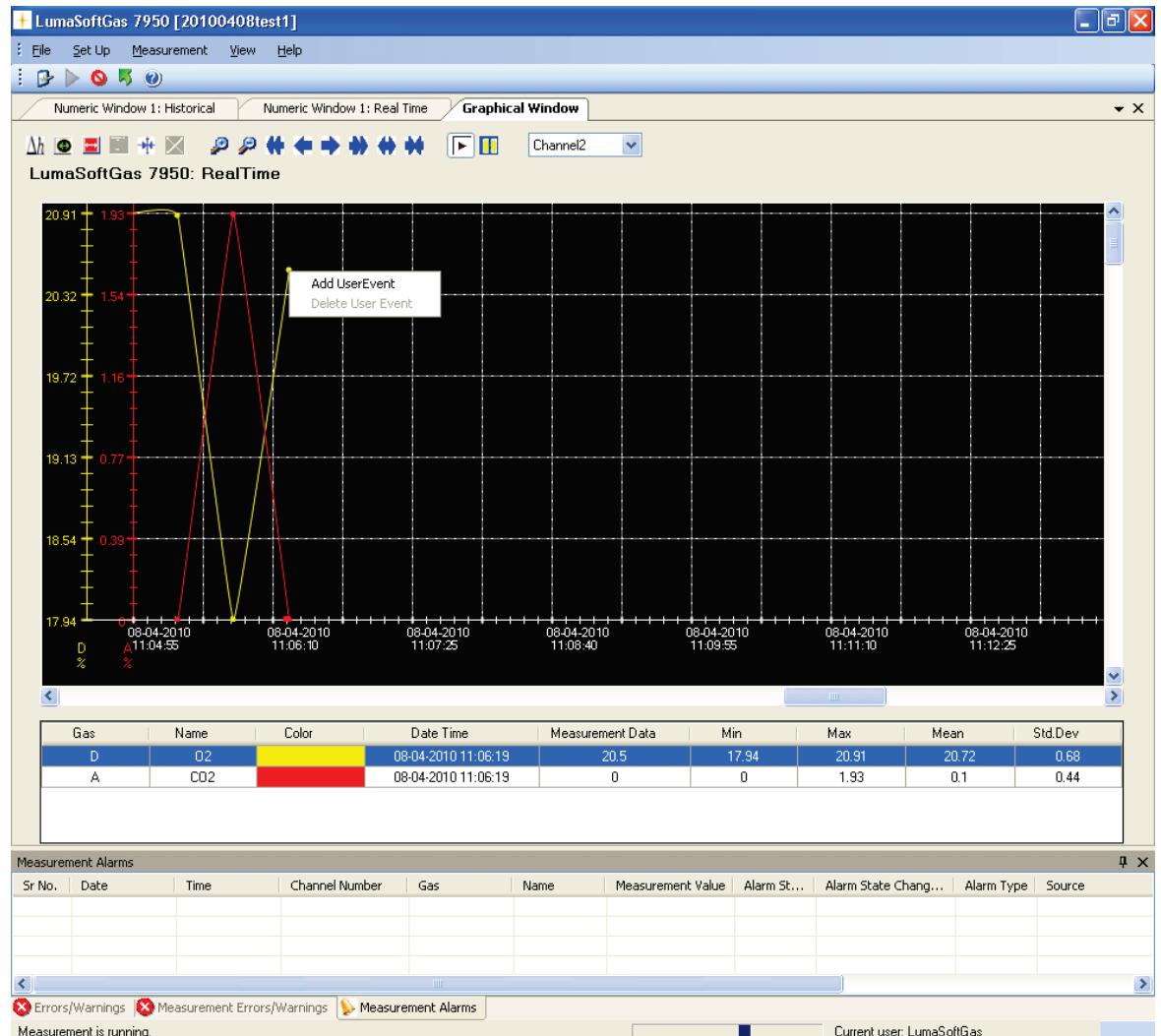


Figure 4.26 Graphical window : Add User Event.

The following window, see Figure 4.27, will appear to add a comment to be displayed for this specific user event.

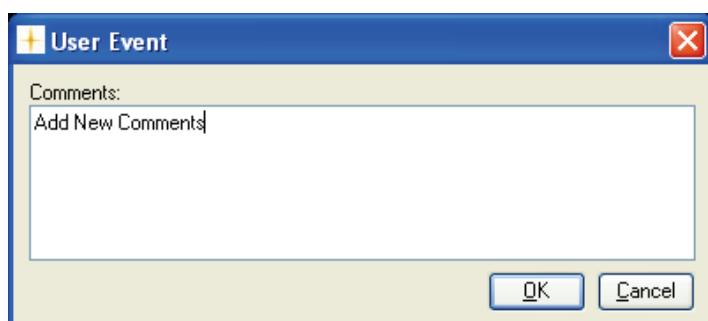


Figure 4.27 User Event window : Comments

Press **OK** to proceed. The user event which has been set up will be shown as an envelope right beside the measurement point, to which it belongs.

To display a user event set the cursor at the envelope.

A user event can be updated or deleted by pressing the right mouse button while placing the cursor on the envelope and selecting either **Update UserEvent** or **Delete UserEvent**.

4.3.2 Printing the graphical window

The graphical window can be output to a printer by right-clicking with the mouse button anywhere inside the graphical window to get the print-menu.

Select either **Print** or **Print Preview**, see Figure 4.28.

The **Print** option will make a printer output and the **Print Preview** will make a screen view of the printout.

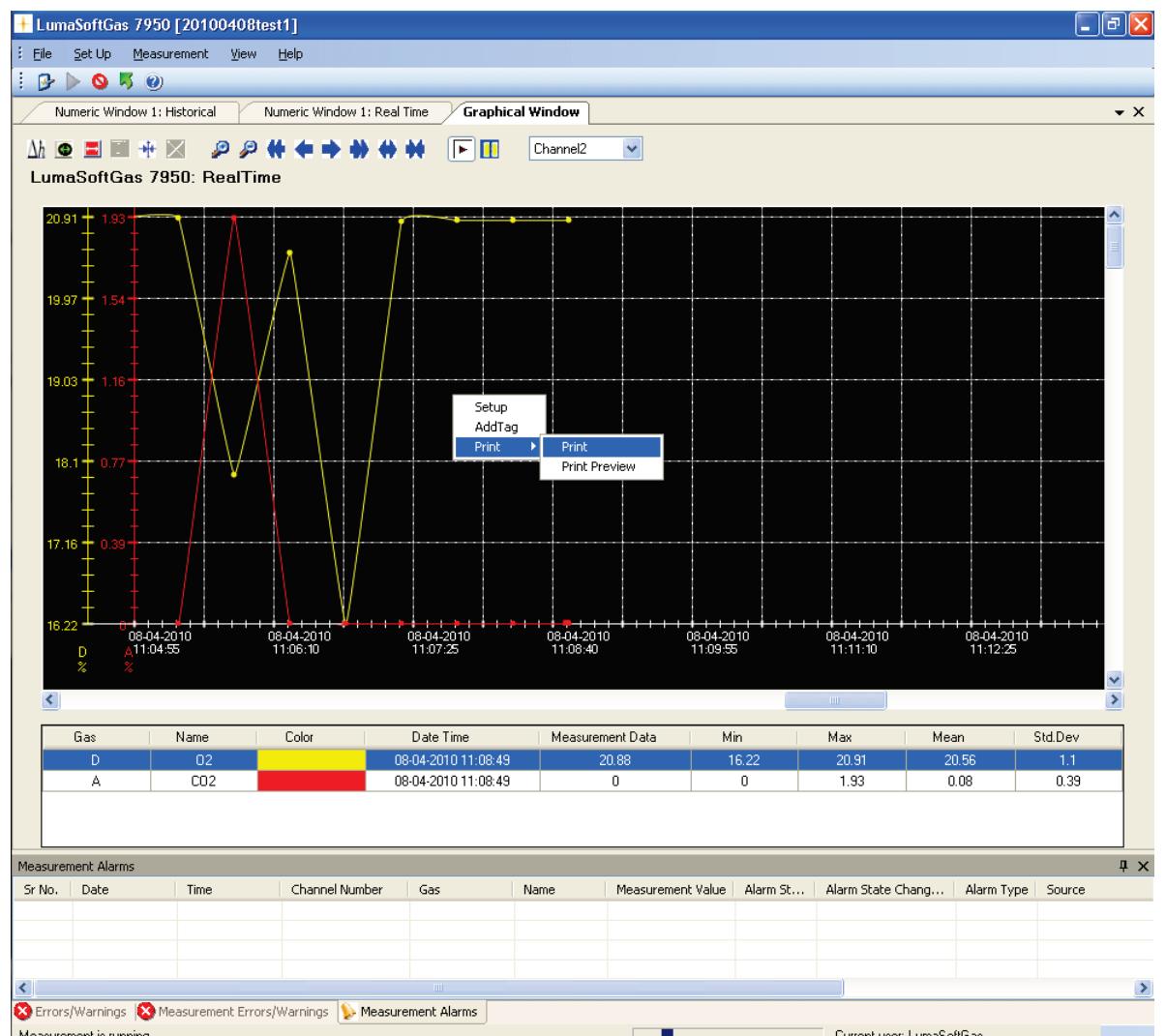


Figure 4.28 Graphical window: Print

The printout contains the curves and a footer with task name, model no and serial number, channel number, information about the task setup and the statistical data, see Figure 4.29.

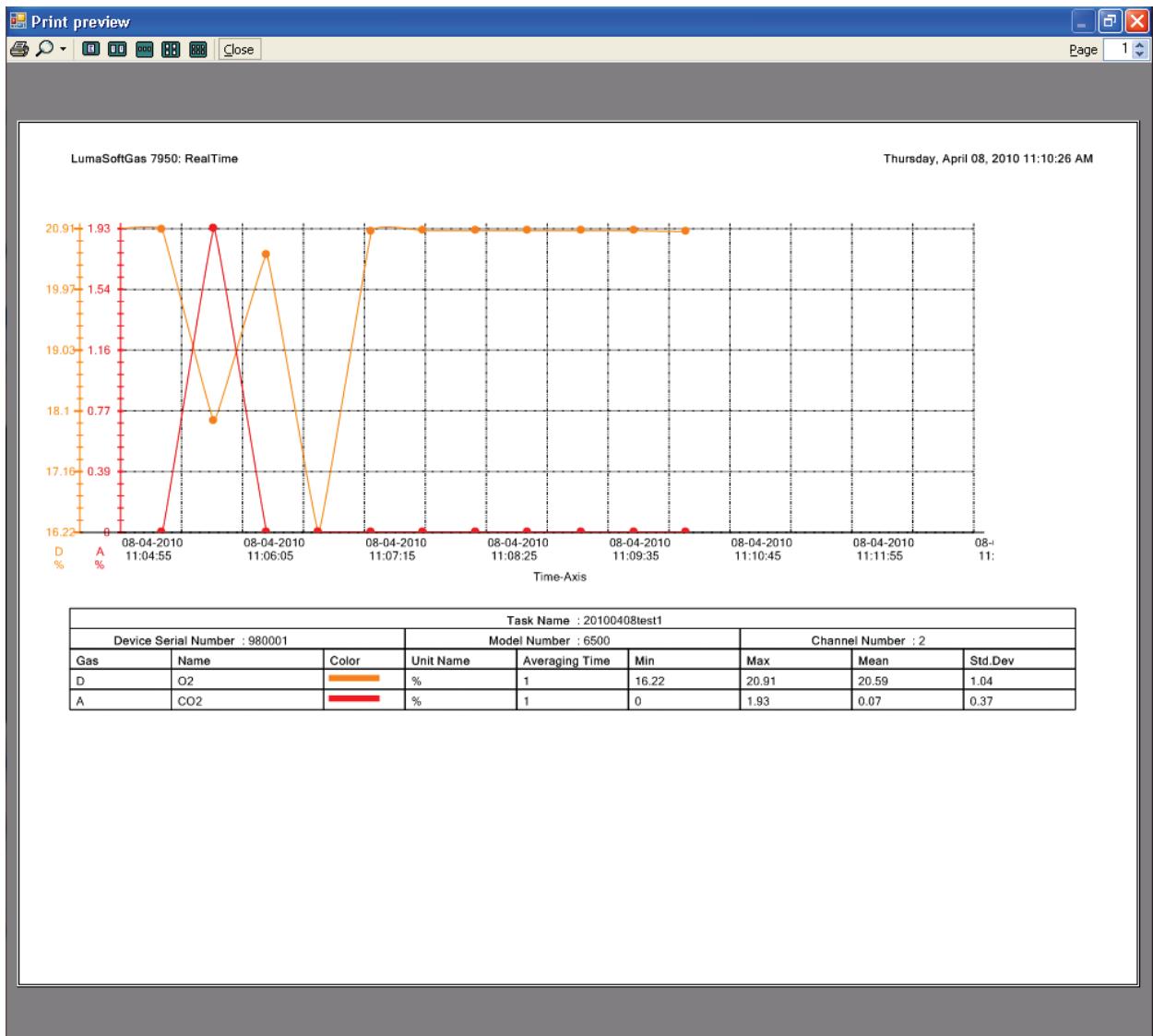


Figure 4.29 Print preview of the Graphical window

4.3.3 Displaying historical data

Open an existing task by selecting **Open Task** in the File drop down menu, see Figure 4.30.

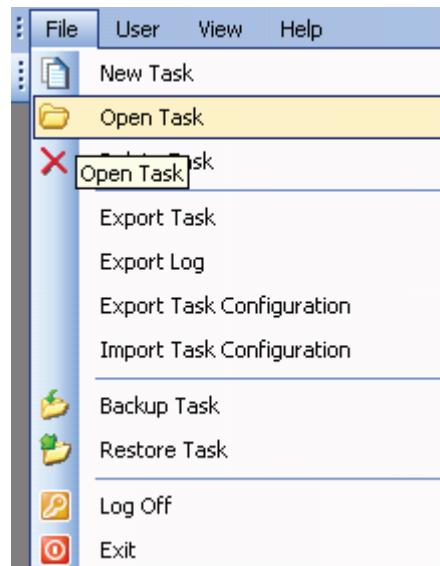


Figure 4.30 File menu: Open Task

The desired task can be opened, see Figure 4.31.

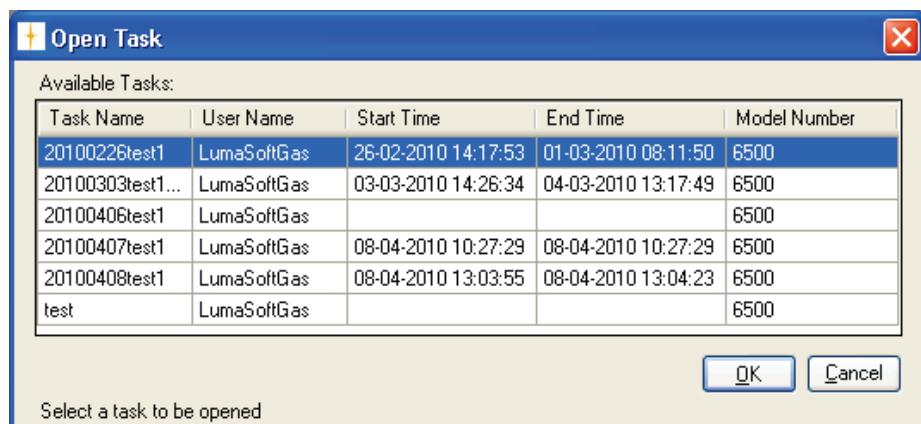


Figure 4.31 Open Task list.

By selecting **Task Contents** in the **File** pull-down menu, see [Figure 4.32](#), the start/stop time for measurements is displayed for every channel, see [Figure 4.33](#).

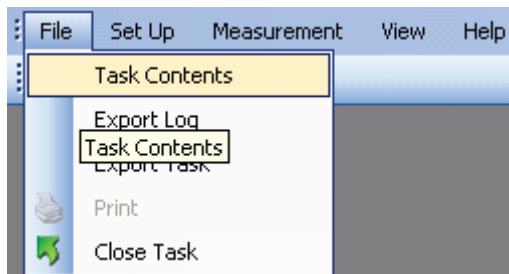


Figure 4.32 File menu: Task Contents.

A screenshot of a 'Task Contents' dialog box. The title bar says 'Task Contents'. The main area is titled 'Measurement Info' and contains a table with 11 rows, each representing a channel. The columns are: Channel No., First Time, Last Time, Device Serial Number, and COM Port. The data is as follows:

Channel No.	First Time	Last Time	Device Serial Number	COM Port
1	08-04-10 10:55:11	08-04-10 11:11:37	980003	COM8
2	08-04-10 10:55:11	08-04-10 11:11:36	980001	COM3
3	n/a	n/a	n/a	n/a
4	n/a	n/a	n/a	n/a
5	n/a	n/a	n/a	n/a
6	n/a	n/a	n/a	n/a
7	n/a	n/a	n/a	n/a
8	n/a	n/a	n/a	n/a
9	n/a	n/a	n/a	n/a
10	n/a	n/a	n/a	n/a
11	n/a	n/a	n/a	n/a

Click to close the dialog-box

Close

Figure 4.33 Contents window

For every channel the device serial number and COM port are also shown.

The historical data can be displayed by selecting **Graphical Window** in the **View** drop down menu, see Figure 4.34, then press the **Historical Data Plotting** icon

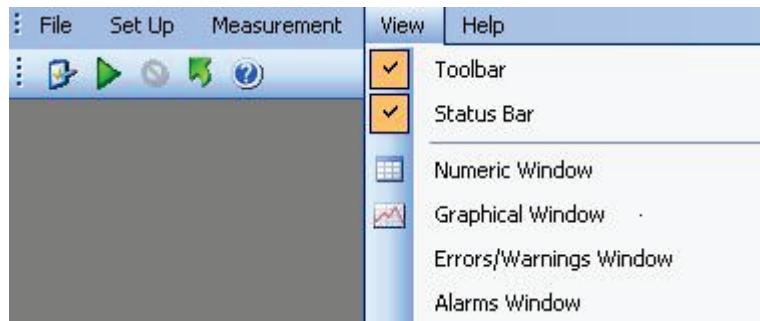


Figure 4.34 View menu: Graphical Window

A specific time interval can be selected by entering date and time in the two fields: **From Date** and **To Date**, see Figure 4.35.

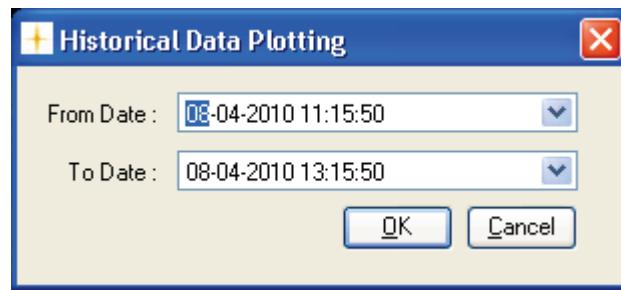


Figure 4.35 Historical Data Plotting, time interval.

Click **OK** to display the historical data in a graph.

The functions of the icons in the historical window are the same as in the Real Time Window described in [Section 4.2.6](#).

To continue the measurements performed in the specific task, press the green arrow icon or select **Start** in the **Measurement** drop down menu, see [Figure 4.23](#).

To display the incoming measurement data (real time data) select the icon.

4.4 Presentation of Data in the Numeric Window

To display numeric measurement data select **Numeric Window** in the **View** pull-down menu.

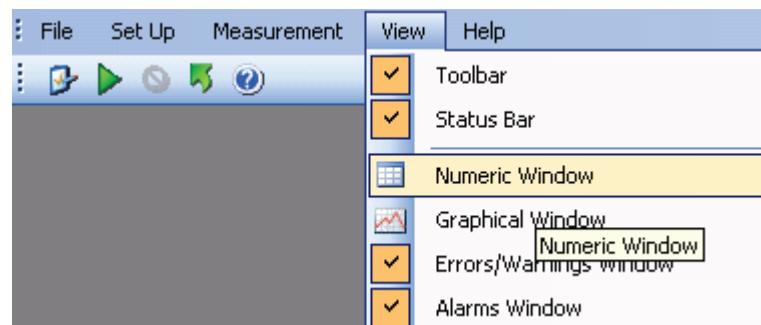


Figure 4.36 View pull-down: Numeric Window

4.4.1 Configuration of the Numeric Window

The **Numeric Window Properties** consists of two Index cards: **Interval** and **Columns**, see [Figure 4.37](#).

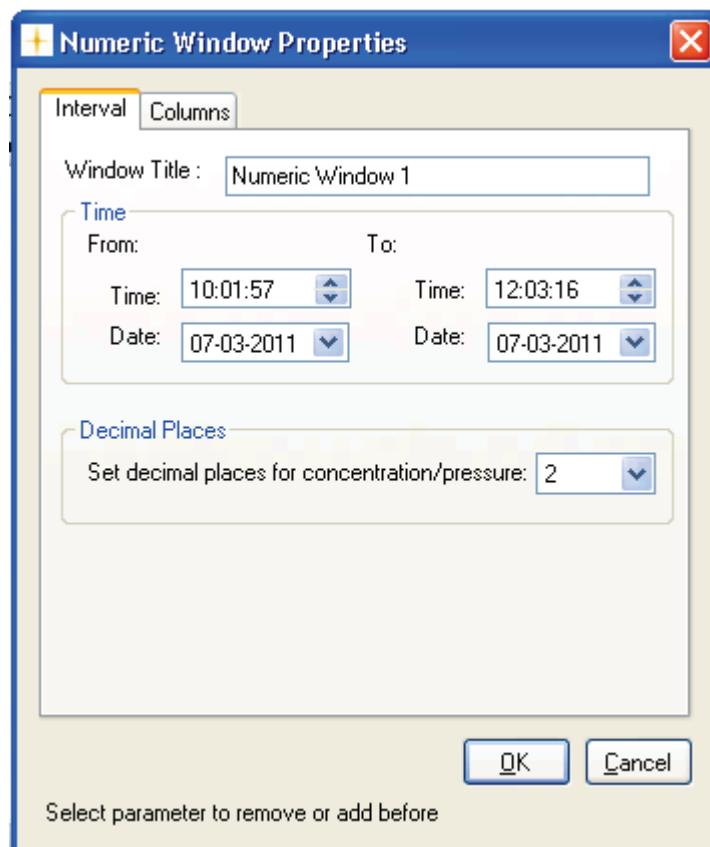


Figure 4.37 Numeric Window Properties

Interval Index Card

Type in a title for the numeric window in the **Window Title** box, see Figure 4.37.

Choose which **Time** interval on a specific date that should be included in the numeric window. This option enables to define the column length as a period of time.

Also the number of **Decimal Places** for the gas concentration values can be selected.

Columns Index Card

Here the gas concentration values, which are to be presented in the numeric window, can be selected, individual for each channel, see figure 4.38.

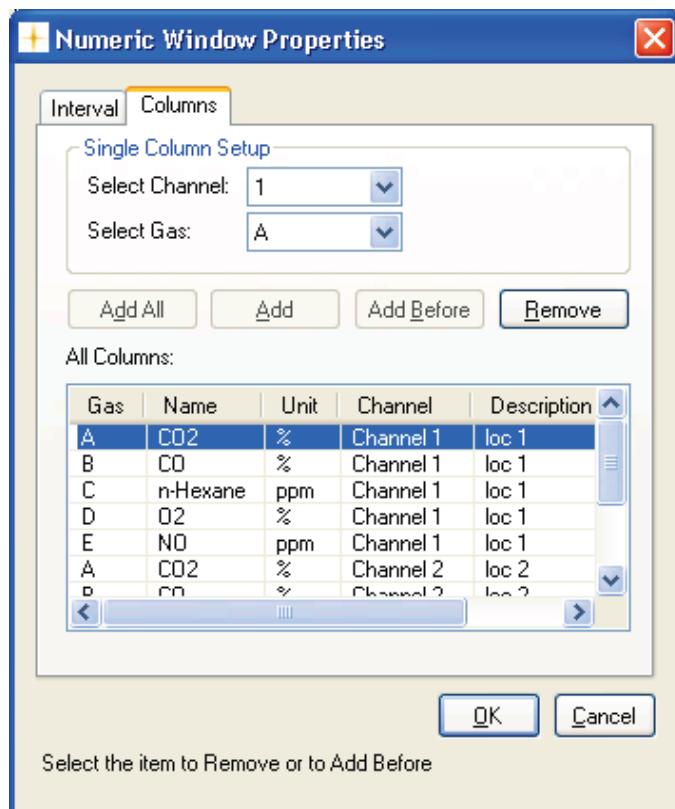


Figure 4.38 Numeric Window Properties : Columns Index Card

For convenience all the Gases, which have been chosen in the **System Configuration Setup**, will appear pre-selected in the table named **All Columns**:

If needed the **Remove** soft-key can be used to remove the display of individual Gases for every available channel.

The **Add All**, **Add**, **Add Before** soft-keys will add all or some selected Gases to be displayed. The fields **Select Channel:** and **Select Gas:** selects which gas is to be displayed in a particular channel.

When the **Numeric Window Properties** is setup as desired, press the **OK** soft-key to proceed.

The Real Time and Historical numeric windows is opened as 2 index cards, see [Figure 4.39](#) and [Figure 4.40](#).

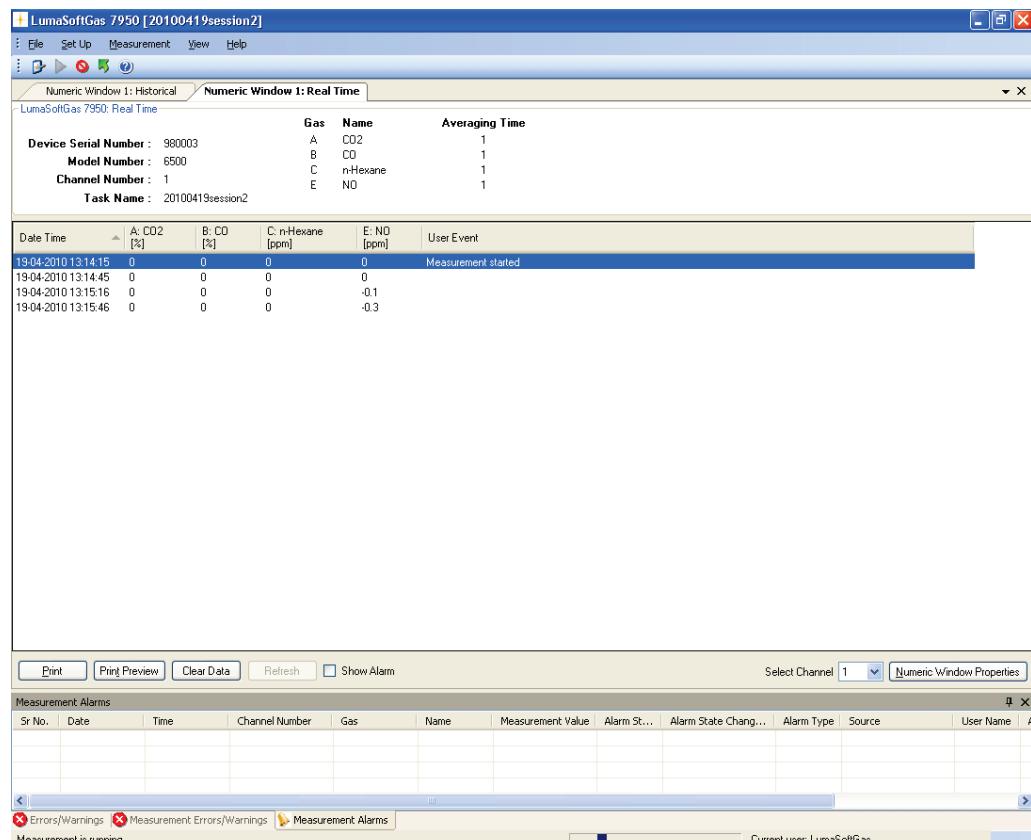


Figure 4.39 The Real Time numeric window

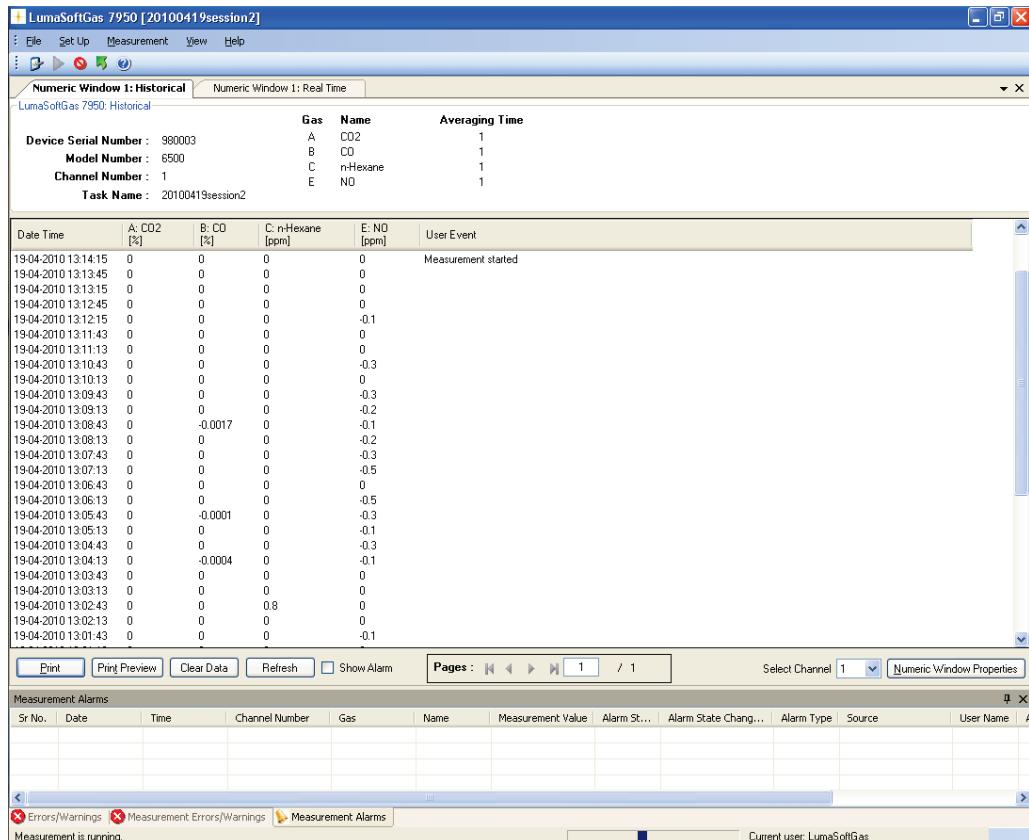


Figure 4.40 The Historical numeric window

4.4.2 The Real Time and Historical Numeric Window

The Numeric window features a **Real Time** display intended for **online** monitoring of gas concentrations and a **Historical** display intended for **offline** measurement views or display of older measurements while being **online**.

The **Real Time** numeric window (Figure 4.39) displays the last measured gas concentrations. The **Real time** display is cleared when entering it.

The **Historical** numeric window (Figure 4.40) can display all the stored gas concentrations, which have been recorded through time.

The **Historical** display can be refreshed to show the last measured gas concentrations, by using the **Refresh** button (Figure 4.40).

When the amount of measured gas concentrations in the **Historical** display is growing through time, the measurements will be sub-divided into pages, for the reason of easy access to any measurement. The **Pages:** bar (Figure 4.41) features 4 buttons for accessing the first, previous, next, last page and an editable field for directly accessing any page.



Figure 4.41 Historical numeric window: Page selection

The displayed gas concentrations, in the **Real Time** and **Historical** numeric windows, are averaged values, which have been resampled, as explained in [section 3.2.3](#).

In the top of both the **Real Time** and **Historical** numeric windows the serial number for the Gas Monitor and other settings are shown ([Figure 4.39](#) and [Figure 4.40](#)).

If **User Events** have been added during the monitoring task, these are also displayed, as a column in the numeric window ([Figure 4.39](#) and [Figure 4.40](#)). How to generate user events is explained in [Section 4.4.3](#).

The **Clear Data** button ([Figure 4.39](#) and [Figure 4.40](#)), clears the displayed measurements in both the Real time and Historical numeric window.

If desired the numeric window displays properties can be changed by using the **Numeric Window Properties** button ([Figure 4.39](#) and [Figure 4.40](#)) as explained in [Section 4.4.1](#).

The Error and Warnings window will register if any errors have occurred while running the measurement. The window can be hidden by pressing Auto Hide icon or by selecting **Errors/Warnings Window** in the **View** drop down menu, see [Figure 4.44](#).

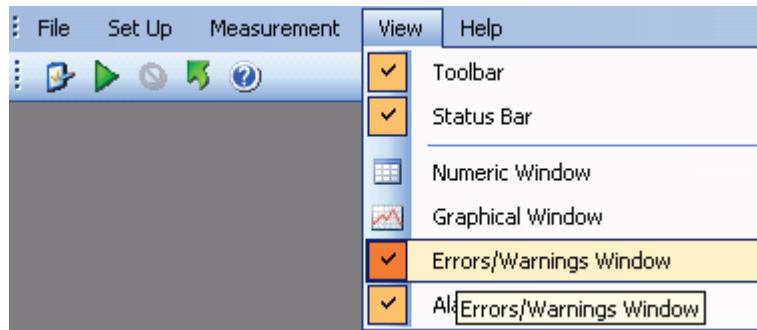


Figure 4.44 View menu: Errors/Warnings Window

4.4.3 User Events in the numeric window

If an event occurs or some conditions are changed during a measurement task it is possible to indicate this event by using the **User Event** function.

A **User Event** can freely be inserted into the **Real Time** or the **Historical** numeric windows.

To insert a user event press the right mouse button while placing the cursor at the measurement point where the event should be added and then select **Add User Event**, see Figure 4.45.

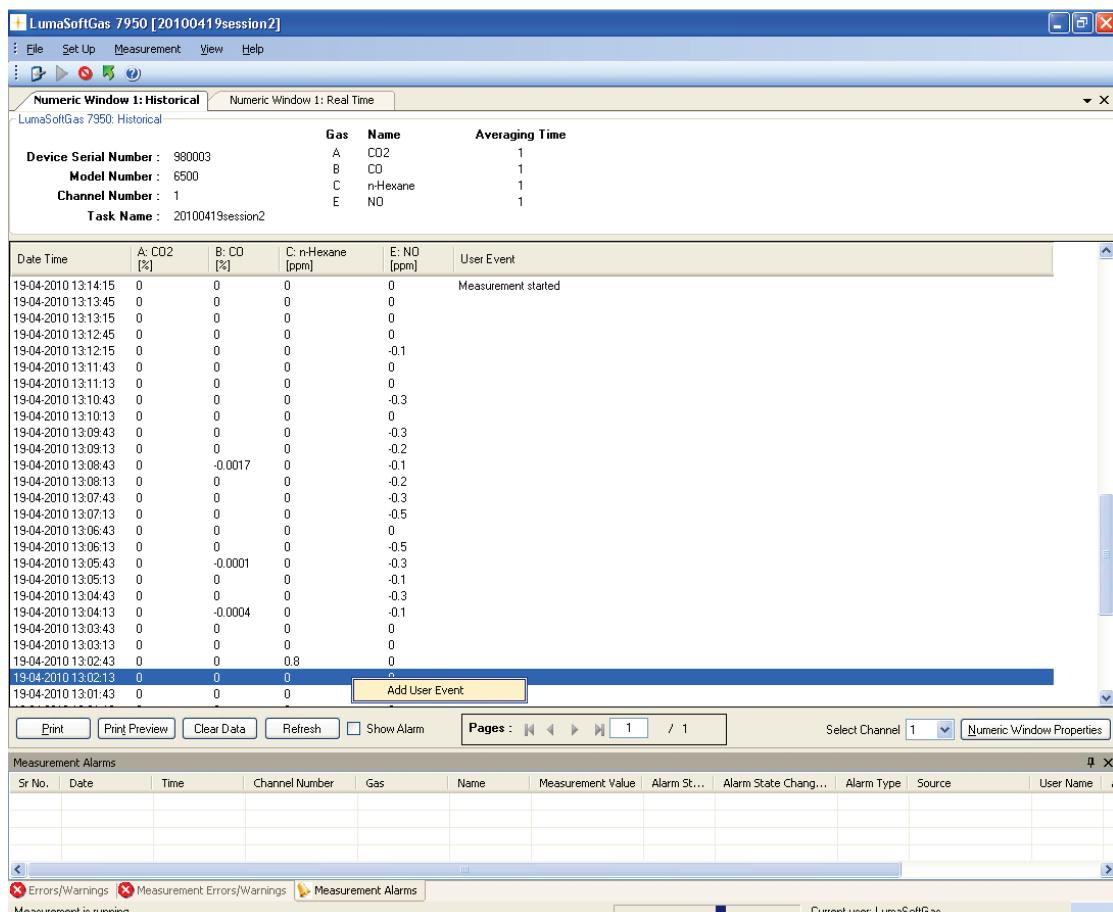


Figure 4.45 Numeric window: Add User Event

The following window will appear, see [Figure 4.46](#). Add a comment which will be displayed for this specific user event.

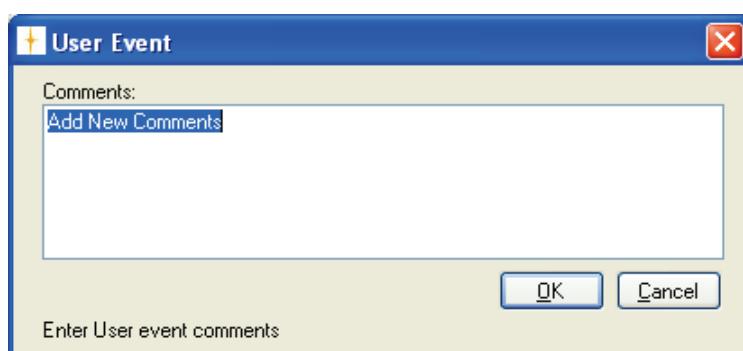


Figure 4.46 User Event window: Comments

Press **OK** to proceed. The user event which has been set up will be shown next to the measurement point, to which it belongs (here the user event "Measurement started" has been added, see Figure 4.47).

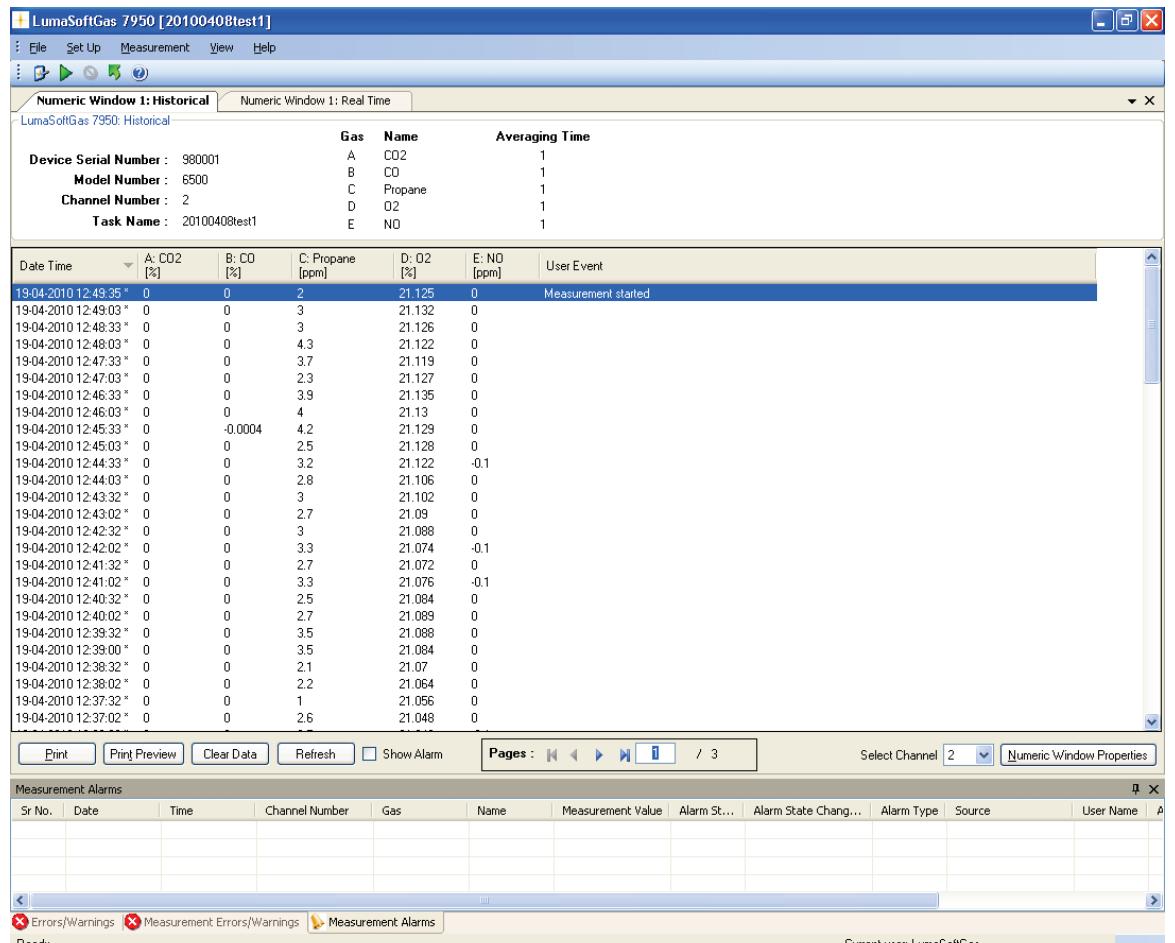


Figure 4.47 Numeric window: User Event text

An user event can be edited or deleted by pressing the right mouse button while placing the cursor at the event and select either **Edit User Event** or **Delete User Event**, see [Figure 4.48](#).

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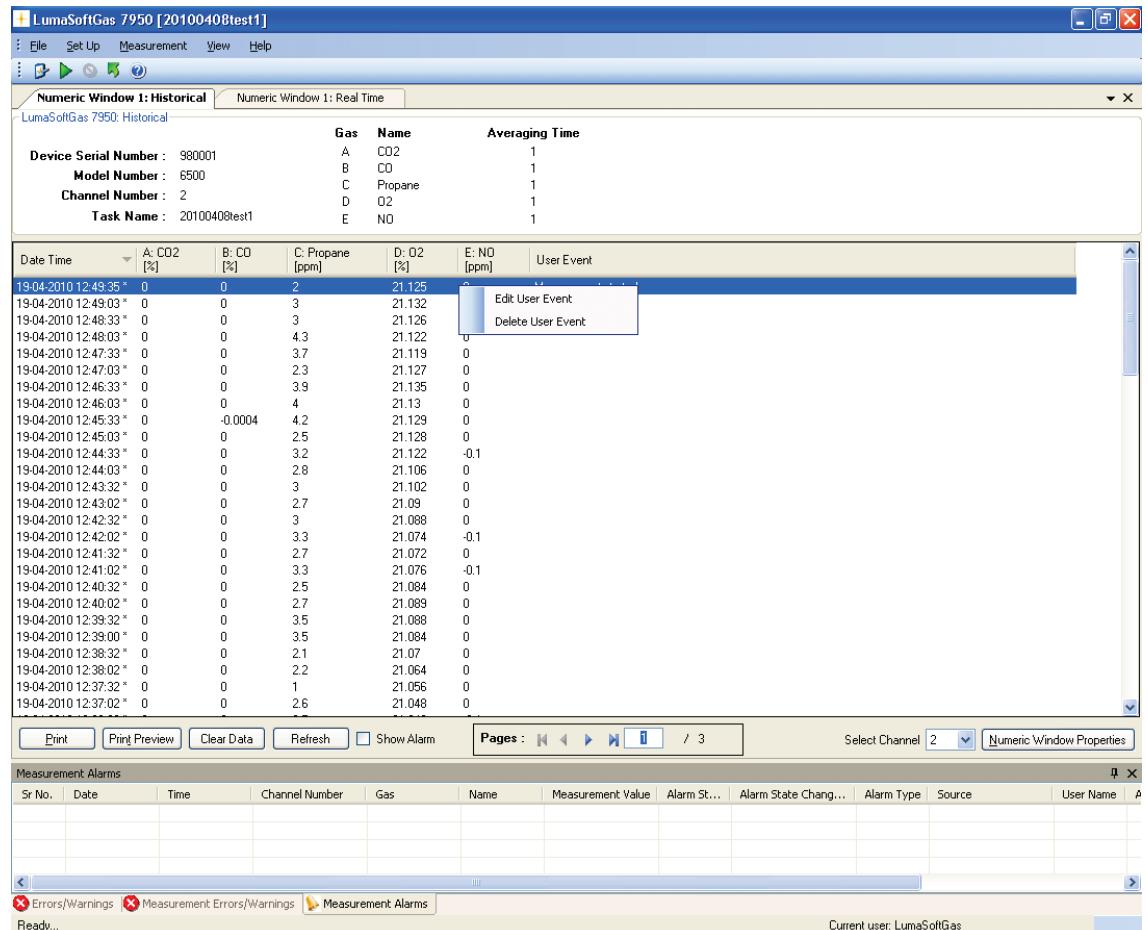


Figure 4.48 Numeric window: Edit or Delete User Event

4.4.4 Printing the numeric window

The **Real Time** or the **Historical** numeric window can be output to a printer by selecting either the **Print** or the **Print Preview** button, see Figure 4.49.

The **Print** option will make a printer output and the **Print Preview** will make a screen view of the printout.

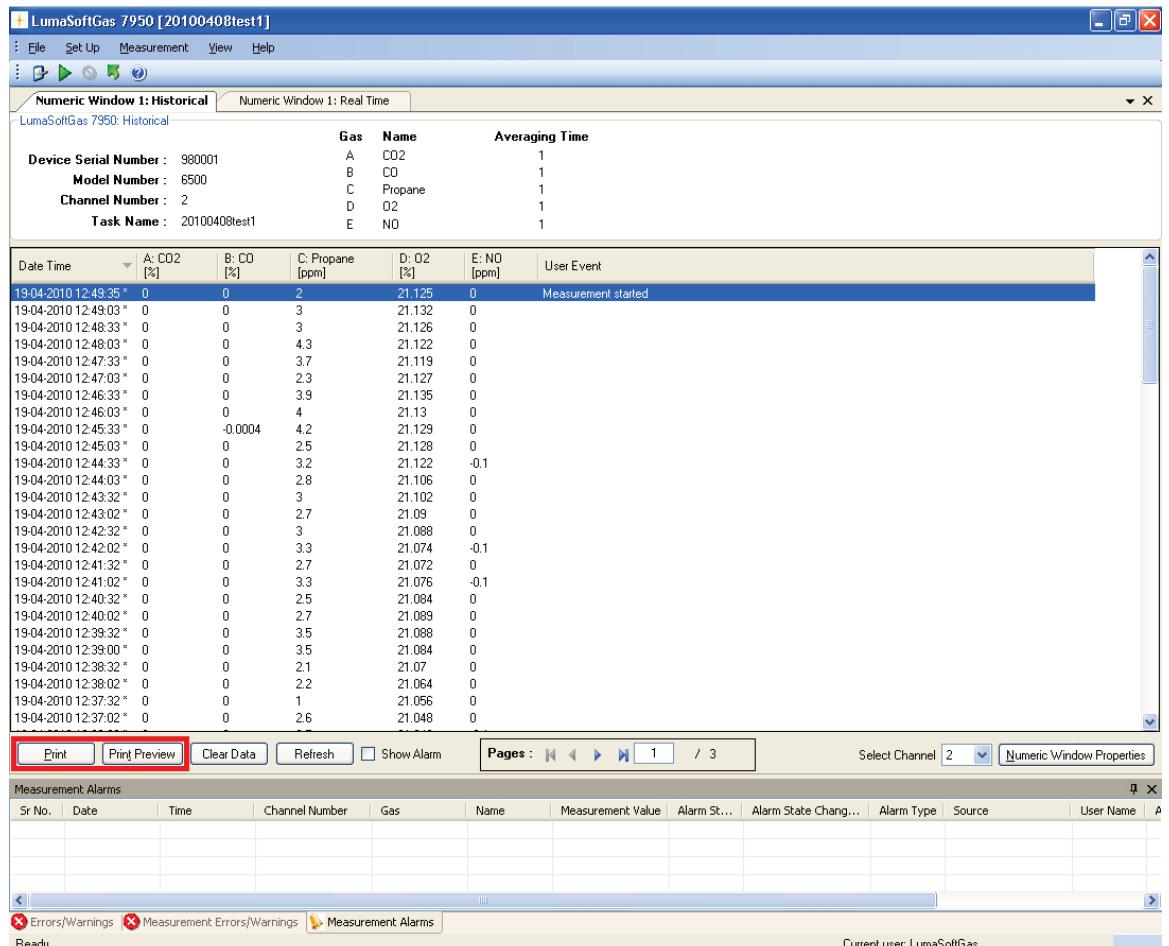


Figure 4.49 Numeric window : Print, Print Preview

The printouts contain the numeric data and a header with task name, monitor type and serial number, channel number and information about the task setup, see [Figure 4.50](#).

The printout can expand to more pages if the measurement data does not fit one page.

Chapter 4

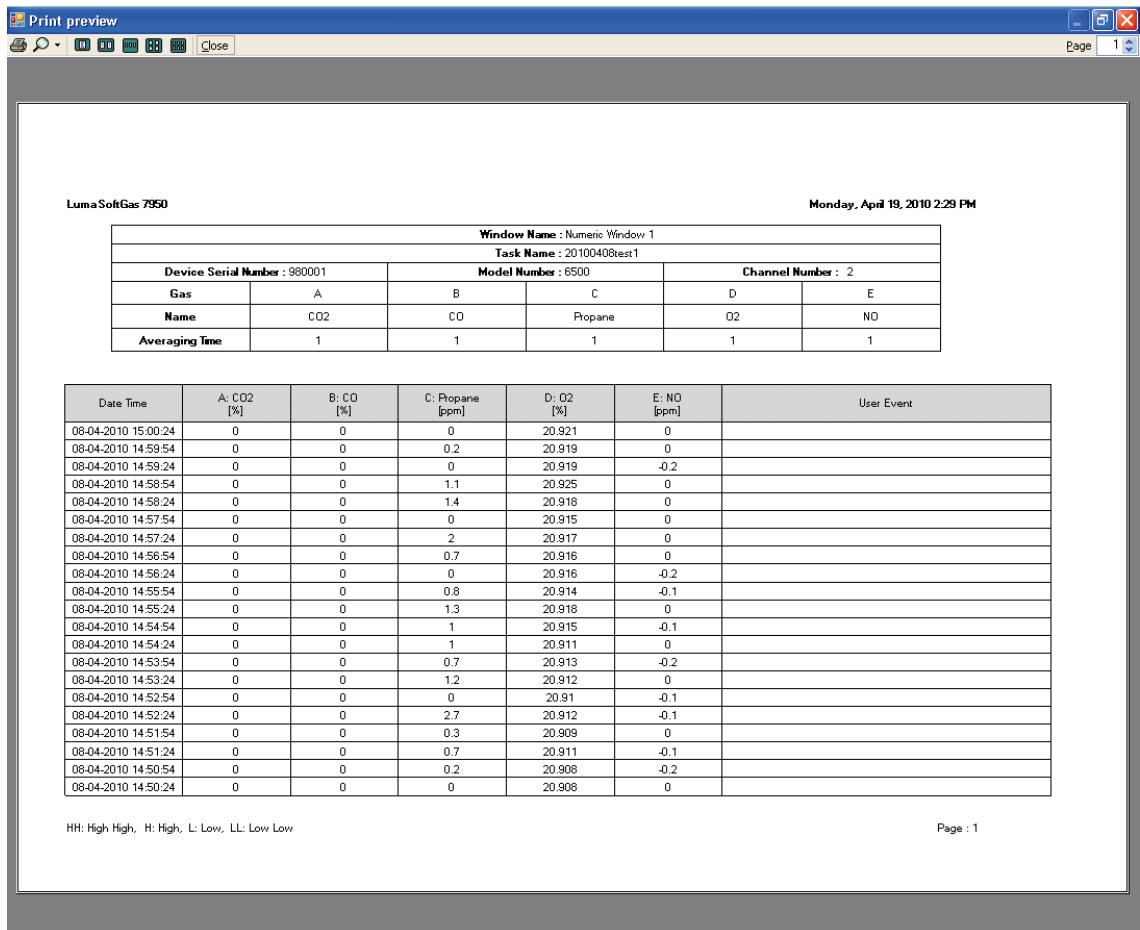


Figure 4.50 Print preview of the Numeric window

4.5 View Measurement alarms

A description of measurement alarms can be found in Section 3.2.2.

To show the alarms in the numeric window check the tick box **Show Alarm**, **Show Alarm** refer to Figure 4.51.

An extra **Alarm** column for every filter is then shown.

If an alarm occurs for a measured value it is shown as either **High**, **High High**, **Low** or **Low Low** in the Alarm column, see Figure 4.51.

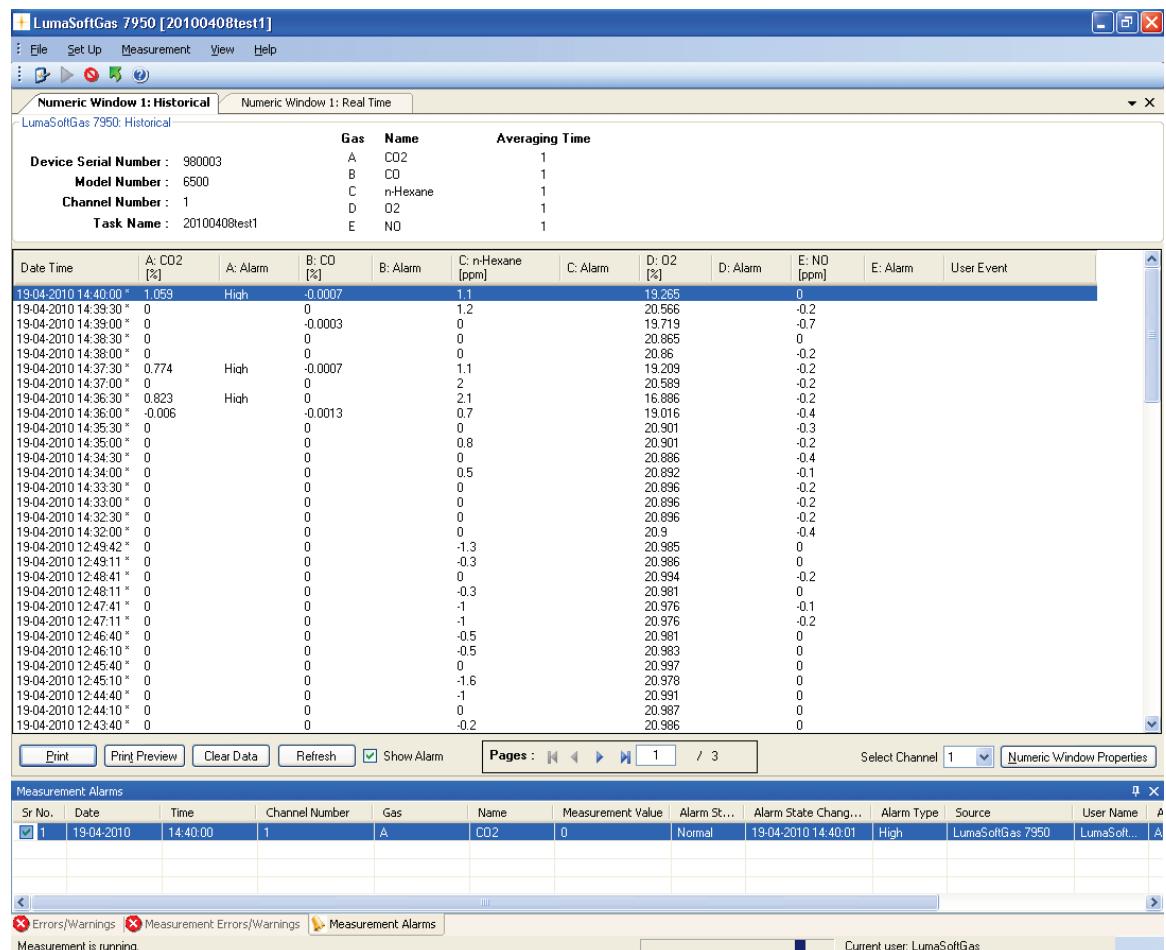


Figure 4.51 Numeric window : Alarms

The **Measurement Alarms** view can be switched on/off by using the **View** menu pull-down **Alarms Window**, see [Figure 4.52](#).

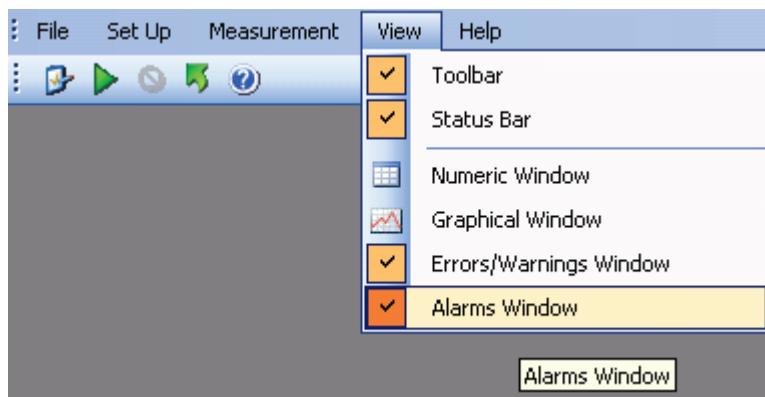


Figure 4.52 View pull-down: Alarms Window

The **Measurement Alarms** view shows the latest occurred software alarms, see Figure 4.53.

Measurement Alarms												
Sr No.	Date	Time	Channel Number	Gas	Name	Measurement Value	Alarm St...	Alarm State Chang...	Alarm Type	Source	User Name	A
<input type="checkbox"/> 1	19-04-2010	14:40:00	1	A	CO2	0	Normal	19-04-2010 14:40:01	High	LumaSoftGas 7950	LumaSoft...	A

Figure 4.53 The Measurement Alarms view

Each alarm is date and time stamped, with channel number, Gas and filter name, measured value and Alarm type.

The **Sr No.** check box gives the user the opportunity to acknowledge an alarm.

4.6 Export Task

During or after measurement all the current measurements can be exported to Microsoft Excel file format. This gives the opportunity to do custom data processing on the measurement data, like calculation, presentation in table or graph format.

Important: Please note that Microsoft Excel (comes as a part of Microsoft Office) must be installed on the same PC as the 7950 application in order for the **Export Task** function to work.

Important: Before exporting data you must select the "**Numeric Window: Historical**", see [Figure 4.40](#), and select the date-time interval to be exported in "**Numeric Window Properties**", see [Figure 4.37](#).

The measurement data export can be initiated by using the **File** menu pull-down **Export Task**, see [Figure 4.54](#).

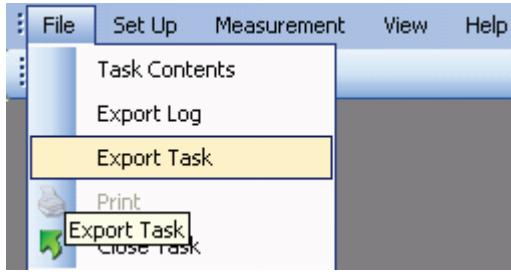


Figure 4.54 File pull-down: Export Task

Select the channels for which measurements data is to be exported, see Figure 4.55.

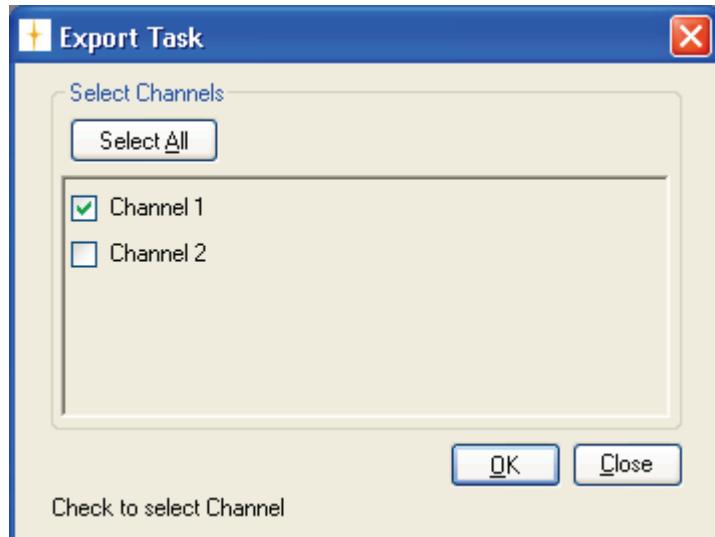


Figure 4.55 Export measurements to Excel format

Select the directory where the Excel format file should be stored, see [Figure 4.56](#).

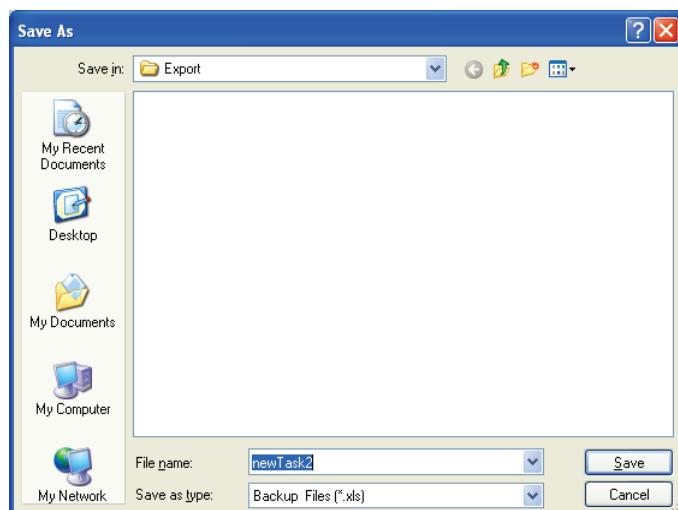


Figure 4.56 Export Excel file dialogue

The default Excel file name is the name of the current task, which can be altered if desired.

The default save folder is the Export folder for the LumaSoft Gas 7950 application (C:\Program Files\LumaSense\LumaSoftGas 7950\Export). Press the **Save** button to create the Excel file.

An **Export Task Error** (Figure 4.57) will occur if Microsoft Excel is not installed. To avoid this error Microsoft Excel (part of the Microsoft Office package) should be installed on the same PC as the LumaSoft Gas 7950 application.

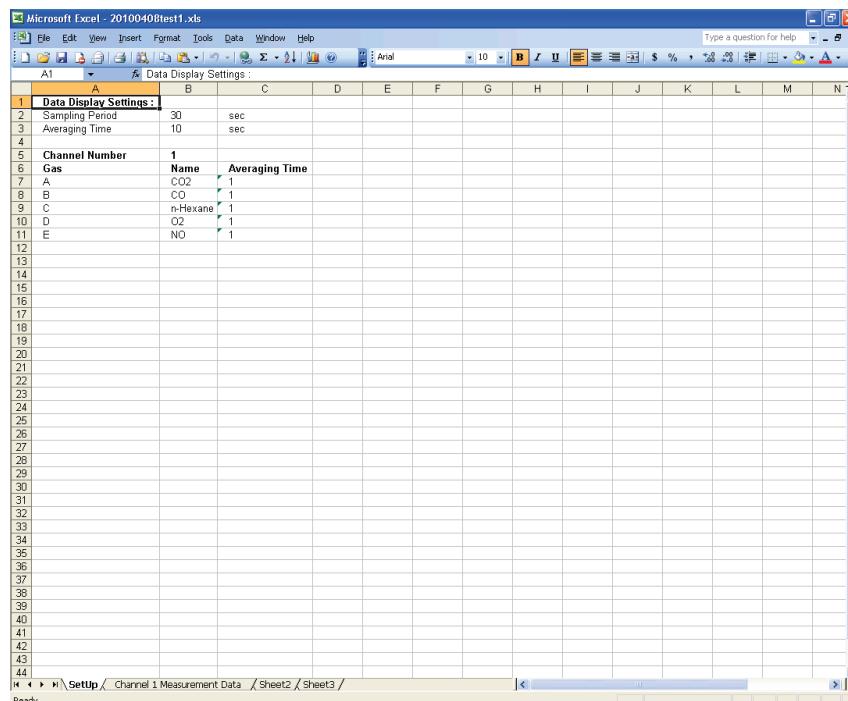


Figure 4.57 Export Task Error

When the export is finished press **Close**, see [Figure 4.55](#).

The export Excel workbook file consists of several tabs.

The first tab shows the setup of the Monitor, see Figure 4.57.



Data Display Settings :			
1	Sampling Period	30	sec
2	Averaging Time	10	sec
3	Channel Number	1	
4	Gas	Name	Averaging Time
5	A	CO2	1
6	B	CO	1
7	C	n-Hexane	1
8	D	O2	1
9	E	NO	1
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
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44			

Figure 4.57 Excel export file: Monitor setup

The following tabs shows the measurement data for each of the channels, see Figure 4.58.

Each measurement is time stamped together with additional information like:

- User event description
- The validity of each gas (Gas A to E) value.
- The need for sensor (NO or O₂) replacement
- Internal faults (Flow faults, Sample cell temperature out of range , IR signal lost, Ambient temperature out of range) in the 1316 device.

Figure 4.58 Excel export file: Channel measurement data.

4.7 Errors/Warnings Window

The Errors/Warnings window can be switched on/off by using the **View** menu pull-down **Errors/Warnings Window**.

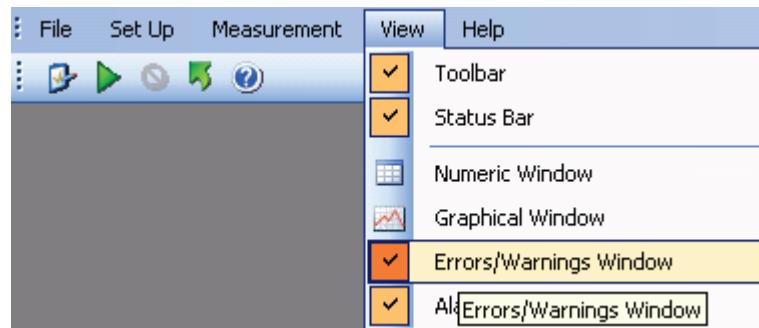


Figure 4.59 View pull-down: Errors/Warnings Window

Warnings and errors while running the LumaSoft Gas application will be shown in the **Errors/Warnings** window, see [Figure 4.60](#), and those occurring during measurement will be shown in **Measurement Errors/Warnings** window, see [Figure 4.61](#)

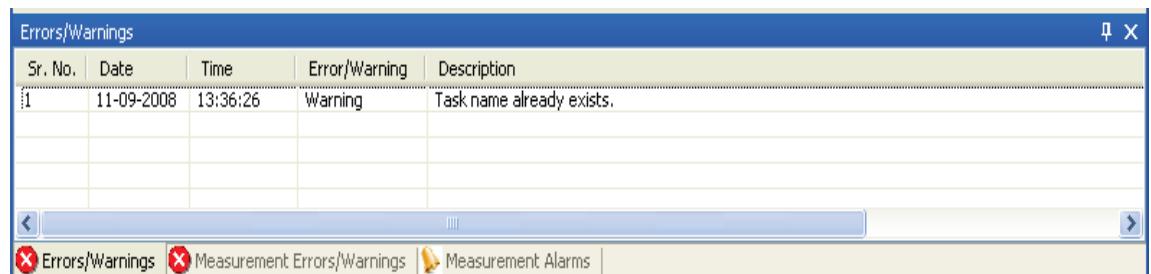


Figure 4.60 Errors/Warnings window

Measurement Errors/Warnings						
Sr No.	Date	Time	Error/Warning	Channel Number	Error/Warning Number	Error/Warning Description
1	20-04-2010	09:17:35	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
2	20-04-2010	09:17:37	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
3	20-04-2010	09:17:38	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
4	20-04-2010	09:17:39	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
5	20-04-2010	09:17:40	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
6	20-04-2010	09:17:41	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data

Figure 4.61 Measurement Errors/Warnings window

Measurement errors are also marked with an asterix (*) next to the **Date Time** stamp, as shown in Figure 4.62.

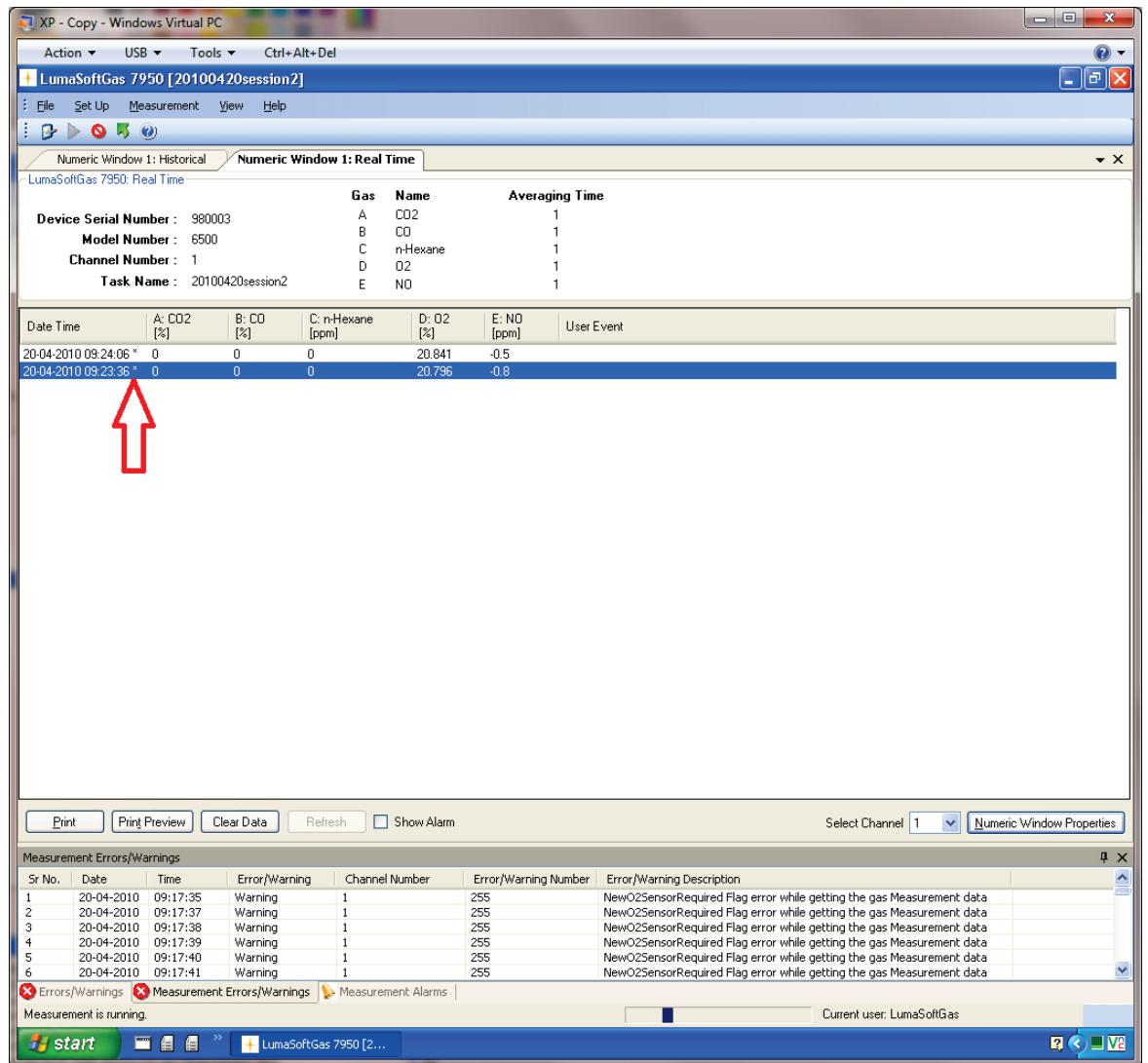


Figure 4.62 Error marking of measurements

4.8 Export log

When having a task open it is possible to export 3 types of logs into CSV (comma separated files), suitable for opening in Microsoft Excel.

The 3 types of logs, which can be exported, are:

- Measurement Errors/Warnings
- User Events
- Alarms

To perform the **Export Log** select the **File** menu pull-down **Export Log**, see Figure 4.63.

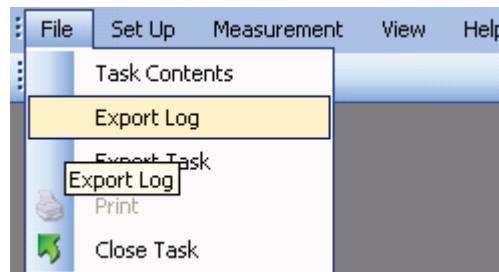


Figure 4.63 File pull-down: Export Log

Open the **Export Log** window, giving the possibility to export the 3 types of logs, see Figure 4.64. A time interval for the log can also be specified.

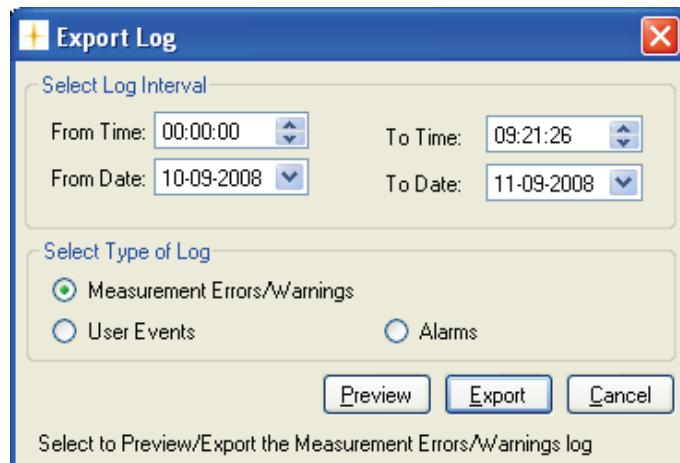


Figure 4.64 Export Log

Select one of the 3 log types in the **Select Type of Log** group box and select the **Export** soft-key to export to a CSV-file.

Select the folder where the log file should be saved, see [Figure 4.65](#)

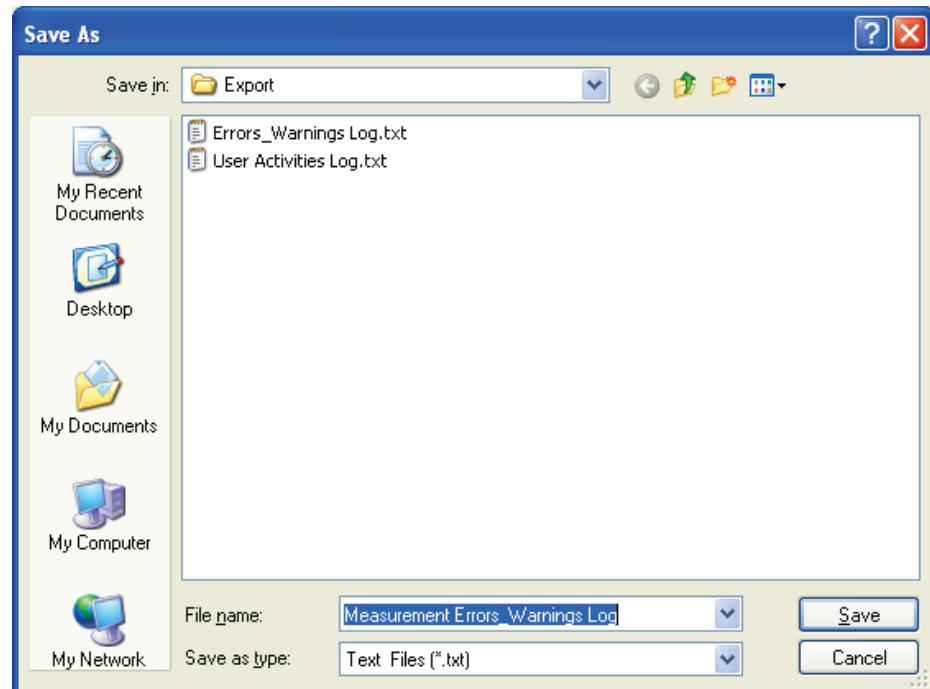


Figure 4.65 Save export log CSV file

Also a preview of the 3 log types can be made by using the **Preview** soft-key. See examples in Figure 4.66, 4.67 and 4.68.

Measurement Err/Wrng Log				
Measurement Date Time	Error/Warning	Channel Number	Error/Warning Number	Error/Warning Description
20-04-2010 09:17:35	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
20-04-2010 09:17:37	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
20-04-2010 09:17:38	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
20-04-2010 09:17:39	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
20-04-2010 09:17:40	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data
20-04-2010 09:17:41	Warning	1	255	NewO2SensorRequired Flag error while getting the gas Measurement data

Figure 4.66 Measurement Errors/Warnings log preview

User Events Log				
Measurement Date Time	Channel Number	User Event Description		
20-04-2010 09:28:37	1	Measurement start		

Figure 4.67 User Events log preview

Alarms Log										
Measurement Date Time	Channel Number	Gas[Unit]	Name	Measurement Value	Alarm State	Alarm State Changed Date Time	Alarm Type	User Name	Alarm ACK Date Time	HH-Limit Value
20-04-2010 09:31:43	1	D [%]	02	20.87	Active		H	LumaSoftGas		
20-04-2010 09:31:44	1	D [%]	02	20.85	Active		H	LumaSoftGas		
20-04-2010 09:31:45	1	D [%]	02	20.84	Active		H	LumaSoftGas		
20-04-2010 09:31:46	1	D [%]	02	20.83	Active		H	LumaSoftGas		

Figure 4.68 Alarms log preview

Chapter 5

Database Management

March 2011

- Export Task ([Section 5.1](#))
- Export/Import Task configuration ([Section 5.2](#))
- Backup/Restore/Delete Task ([Section 5.3](#))
- Export Log ([Section 5.4](#))

5.1 Export Task

To view the data in another format and do further calculations on data, it is possible to export obtained data to Microsoft Excel.

Please note that Microsoft Office must be installed for the export task functionality to work.

If the LumaSoft Gas application is not started start it and login with username and password.



Figure 5.1 User Login

Select **Export Task** in the **File** pull-down menu.

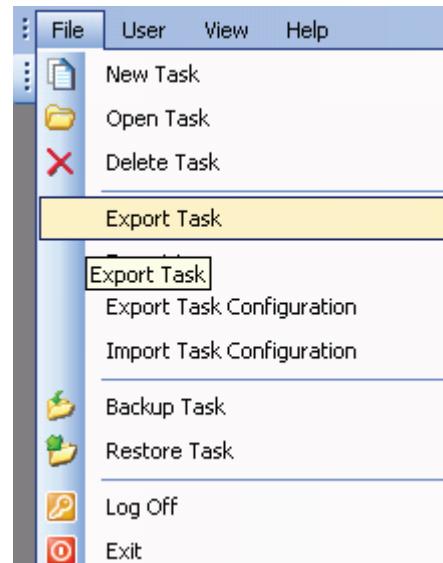


Figure 5.2 File pull-down: Export Task

The Export Task window will appear [Figure 5.3](#).

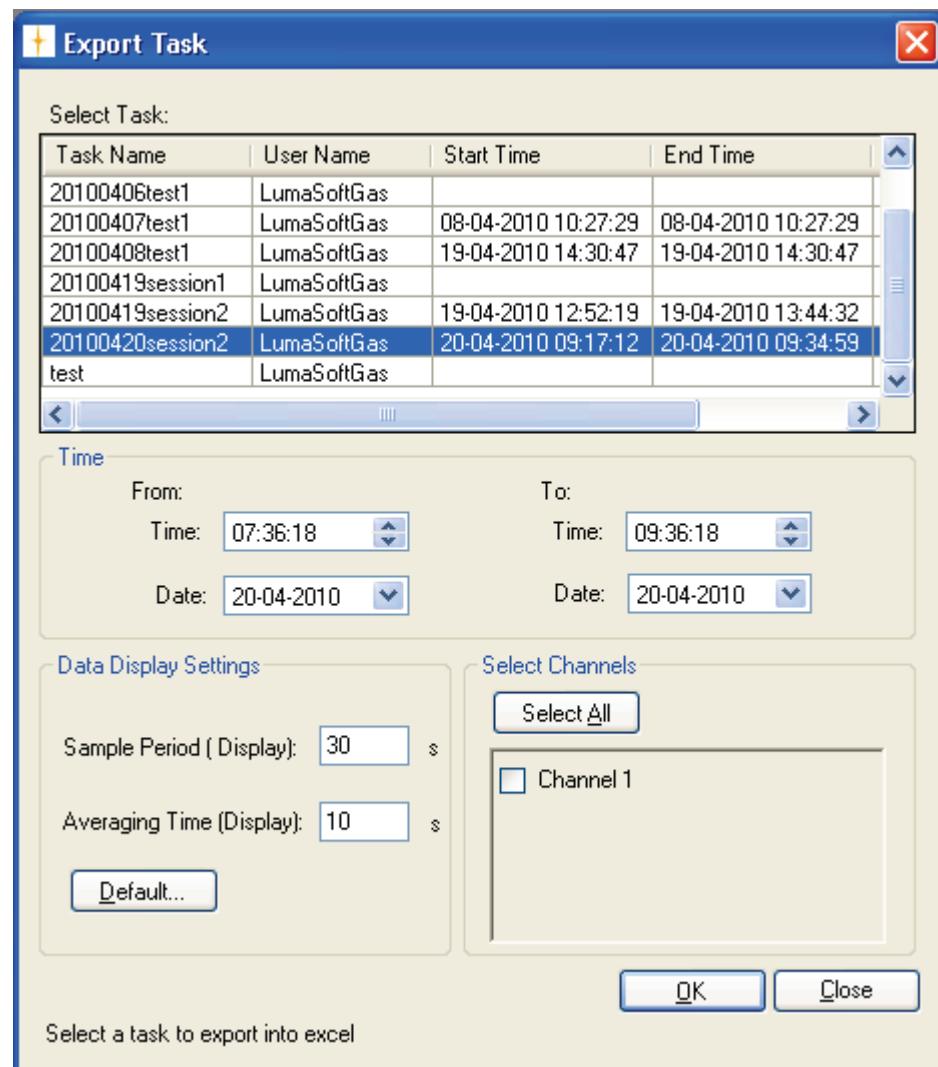


Figure 5.3 Export Task window

Select the task to be exported to **Excel**, do export data filtering by setting the **Time** (date and time range), the **Data Display Settings** (explained in [section 3.2.3](#)) used for resampling/averaging the measurement data and finally use **Select Channels** to choose all or some channels for the Excel data export.

Press **OK** to proceed.

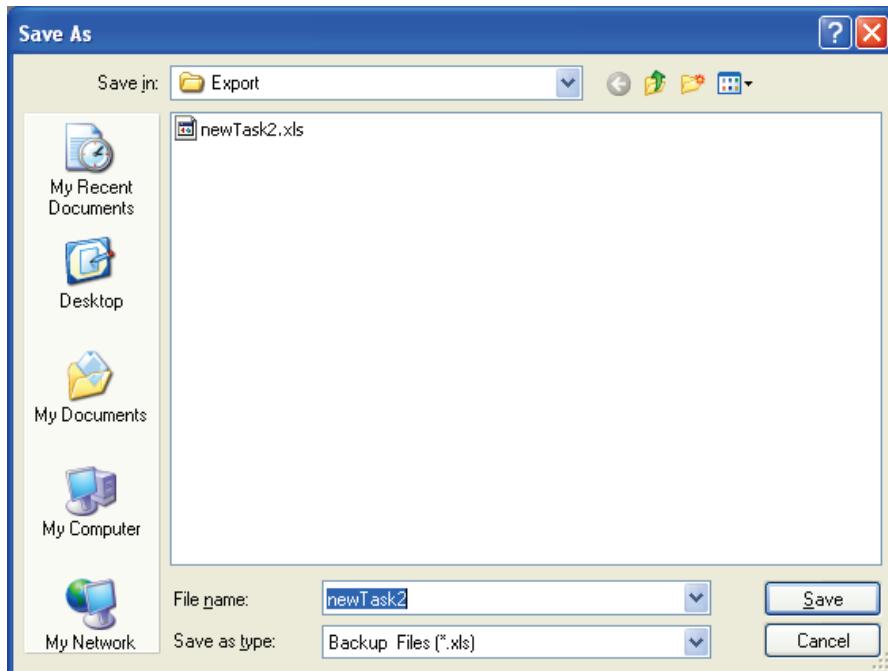


Figure 5.4 Folder/Excel file name selection window

Search for a folder where the task should be stored, and type in a name for the task in the field: **File Name**, see [Figure 5.4](#).

The default file name for the excel file is the name of the export task.

Press the **Save** soft-key to save the Excel file, see [Figure 5.4](#).

Press **Close** (see [Figure 5.3](#)) when the Excel file has been exported.

The exported task can be opened in Excel format from the above selected folder.

The Excel spreadsheet contains information about the setup of the specific measurement in the first tab of the Excel file, see [Figure 5.5](#), and the measurement data for each channel of the multiplexer in the following tab(s), see [Figure 5.6](#).

5.2 Export/Import Task Configuration

The task configuration export makes an export of a task configuration into a file in xml format.

The advantage is that once a task has been setup and a backup has been made with the export task configuration, it can be reused by doing an import of the task configuration. This saves the work of doing the same setup again.

5.2.1 Export task configuration

If the LumaSoft Gas application is not started start it and login with username and password.



Figure 5.7 User Login

Select **Export Task Configuration** in the **File** pull-down menu.

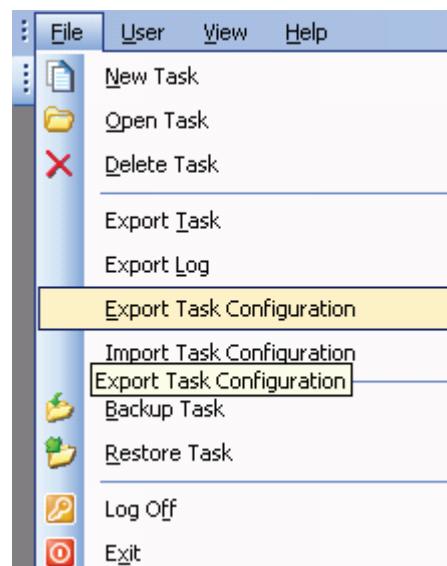


Figure 5.8 File pull-down: Export Task Configuration

The following window will appear.

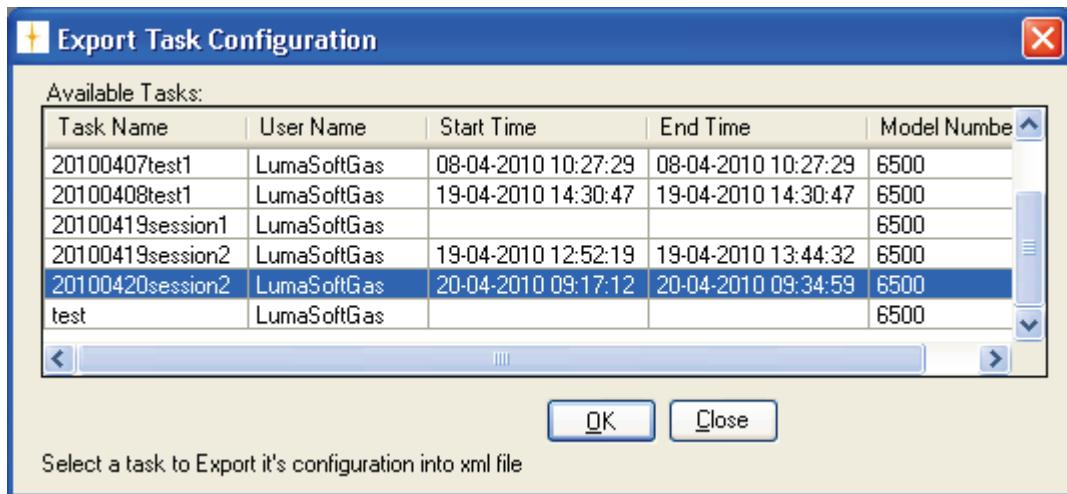


Figure 5.9 Export Task Configuration window

Select the task for which the configuration is to be exported to a xml-file. Press **OK** to proceed. (See Figure 5.9)

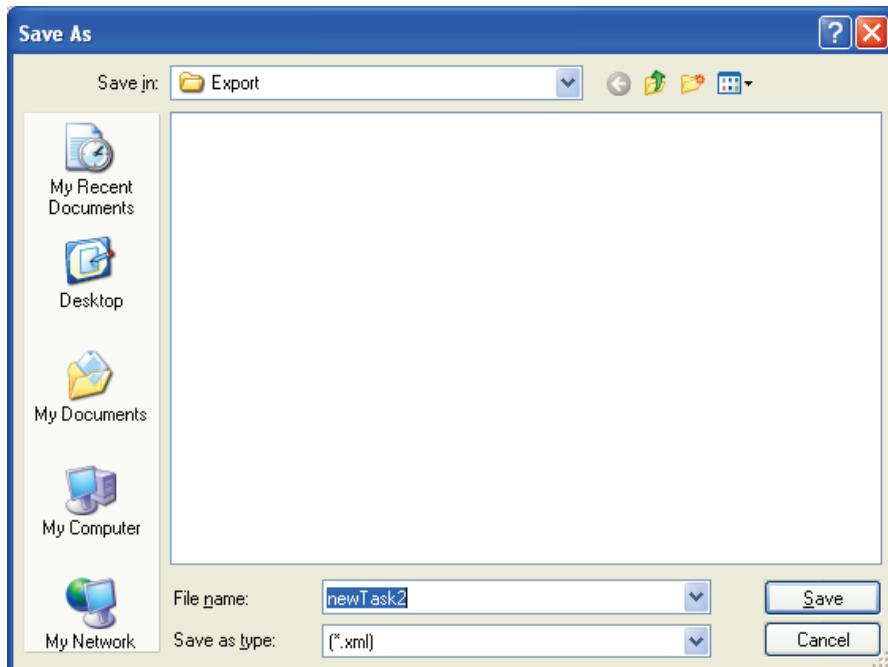


Figure 5.10 Folder/xml task configuration file name selection window

Search for a folder where the xml task configuration should be stored, and type in a name for the task configuration file in the field: **File Name**. (See Figure 5.10)

The default file name for the xml configuration file is the name of the task that is having it's configuration exported.

Press the **Save** soft-key to save the xml task configuration file. (See Figure 5.10)

Press **Close** when the task configuration file has been saved. (See [Figure 5.9](#))

5.2.2 Import Task Configuration

If the LumaSoft Gas application is not started start it and login with username and password.



Figure 5.11 User Login

Select **Import Task Configuration** in the **File** pull-down menu.

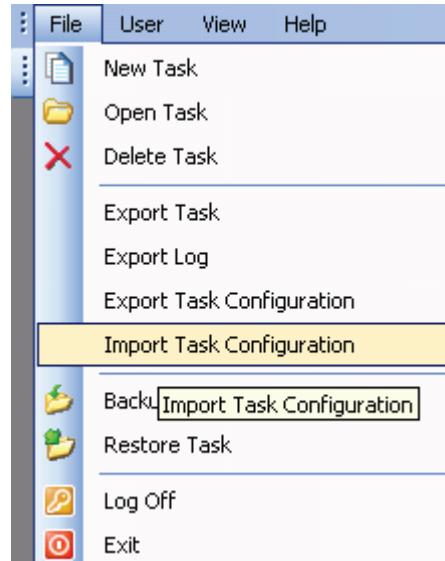


Figure 5.12 File pull-down: Import Task Configuration

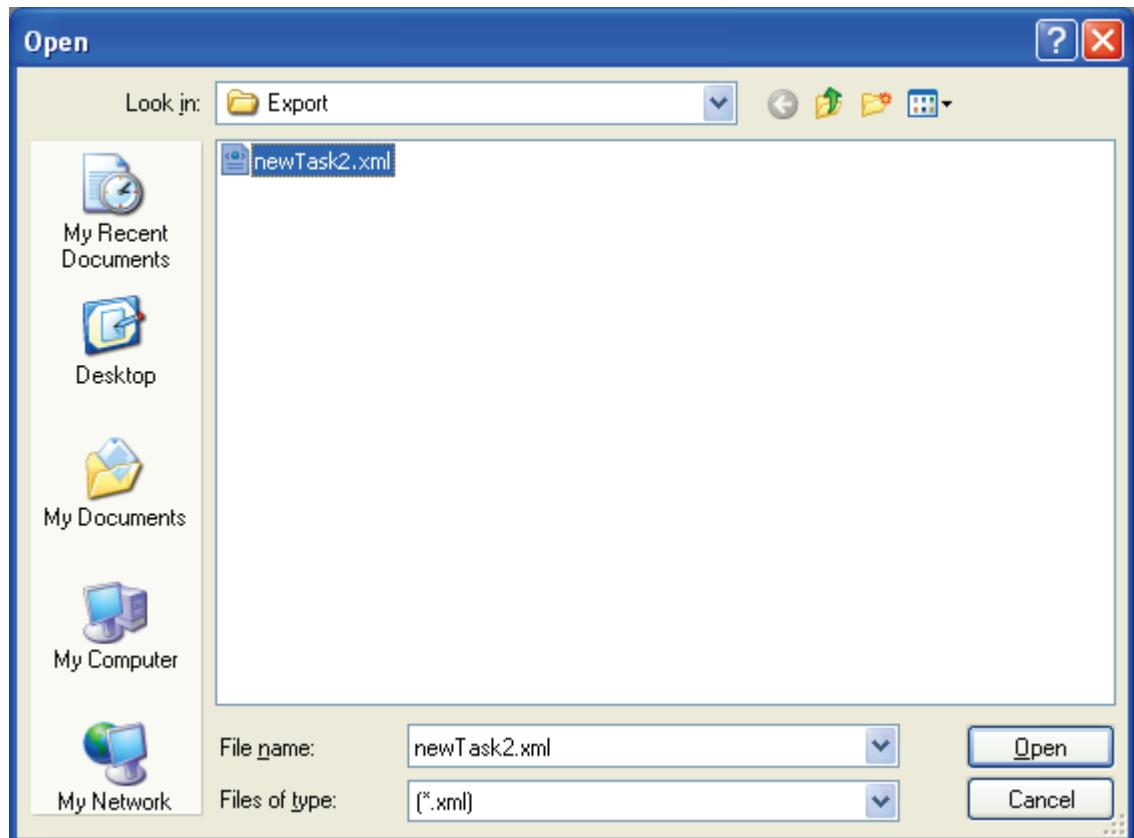


Figure 5.13 Folder/xml configuration file selection window

Select the xml file to import.

After having opened the xml file the following message might appear, if the task already exist in the database.

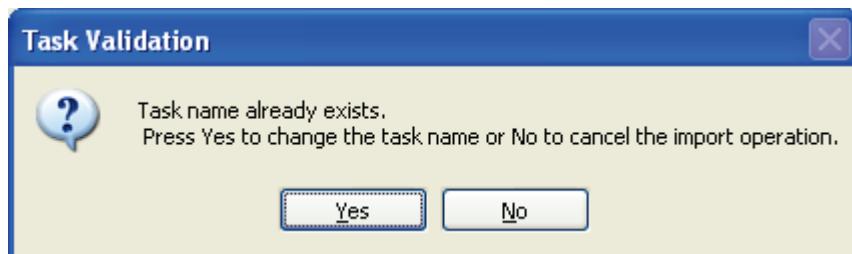


Figure 5.14 Task Validation window

After pressing the **Yes** soft-key you can define a new task name for the imported task, see Figure 5.15.

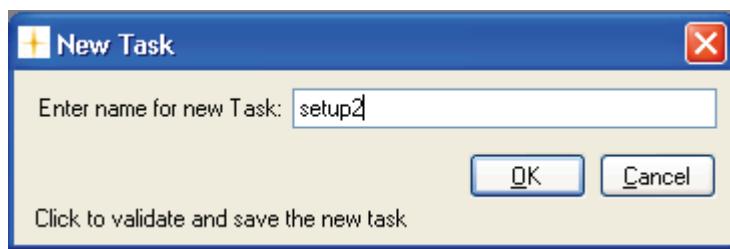


Figure 5.15 New Task name

Press the **OK** soft-key to import the task configuration.

5.3 Backup/Restore/Delete Task

This function enables to backup and restore measurement tasks stored in the SQL Server database.

The backup will contain both setup and measurement data.

Please note that users with the Operator access level cannot make a backup/restore of a task.

Also note that only users with the Super access level can delete a task.

5.3.1 Backup Task

If the LumaSoft Gas application is not started start it and login with username and password.



Figure 5.16 User Login

Select **Backup Task** in the **File** pull-down menu, see [Figure 5.17](#).

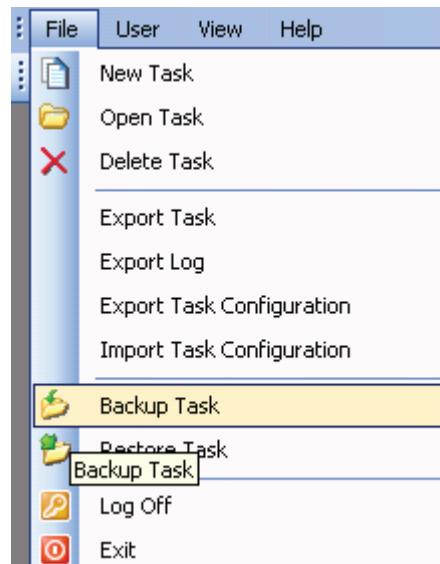


Figure 5.17 File pull-down: Backup Task

A window will appear, showing the available tasks for backup.

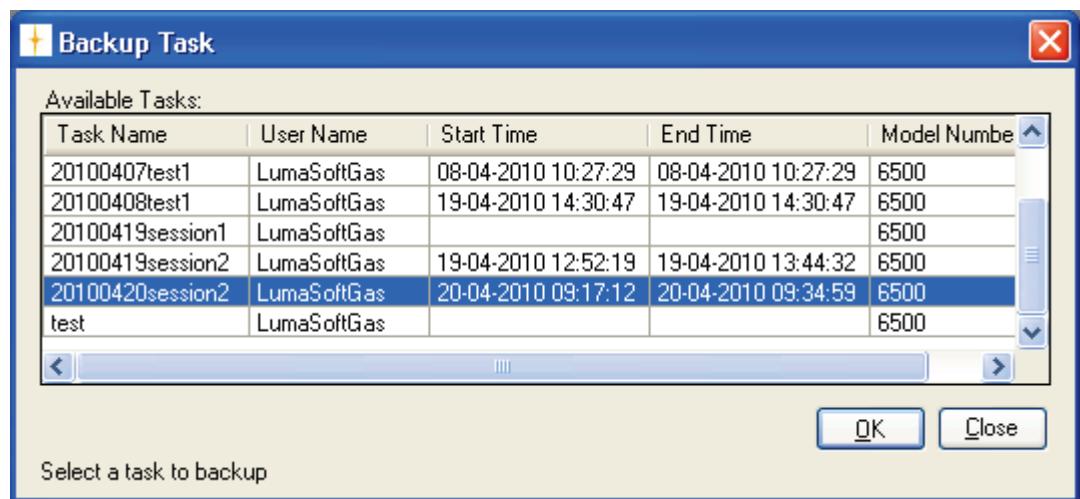


Figure 5.18 Task selection window

Select the task for which a backup file is to be made, and press **OK** to proceed.

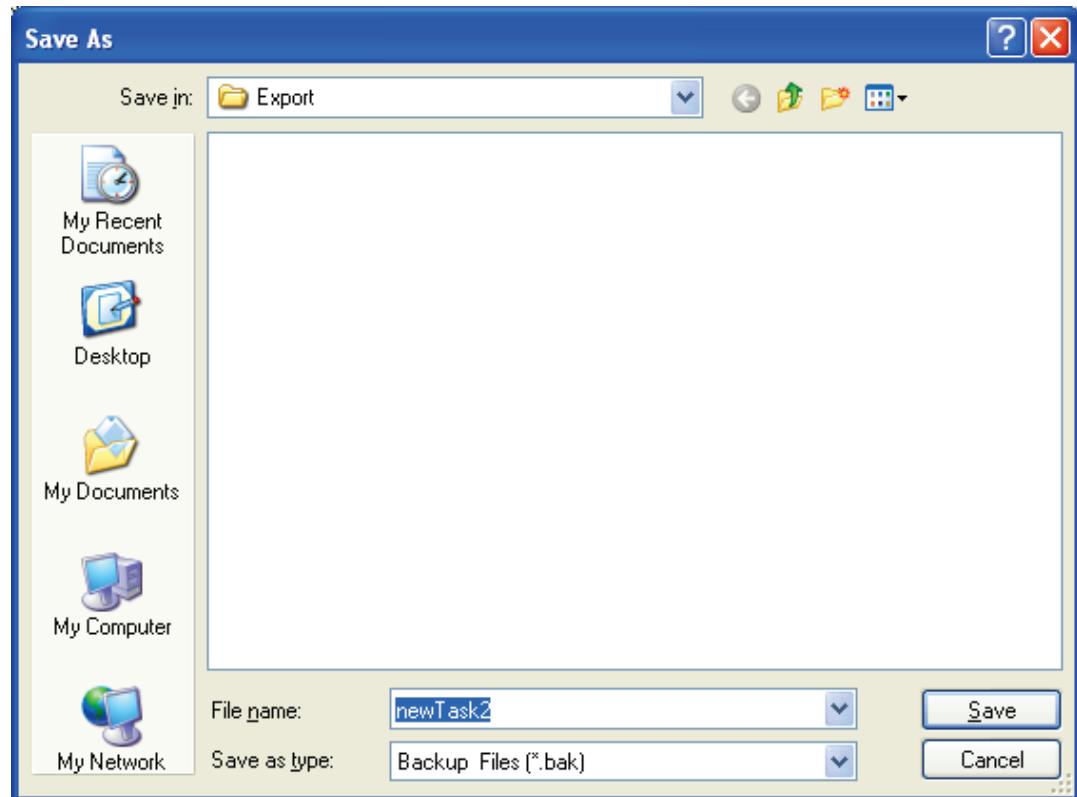


Figure 5.19 Folder/task file name selection window

Search for a folder where the task backup file should be stored and type in a filename in the window shown in Figure 5.19.

The default file name for the task backup file is the name of the task selected for backup.

Press the **Save** soft-key to save the Backup file. (See Figure 5.19)

Press the **Close** soft-key after the backup. (See [Figure 5.18](#))

If you do not have sufficient rights to make the backup, you will get a Backup failed message, see Figure 5.20. In that case you must ensure that the group **Everyone** has the full rights for the backup folder.



Figure 5.20 Backup failed message

Check with your system administrator that the following rights (Permissions) for the group **Everyone** are created for the backup folder ([Figure 5.21](#)).

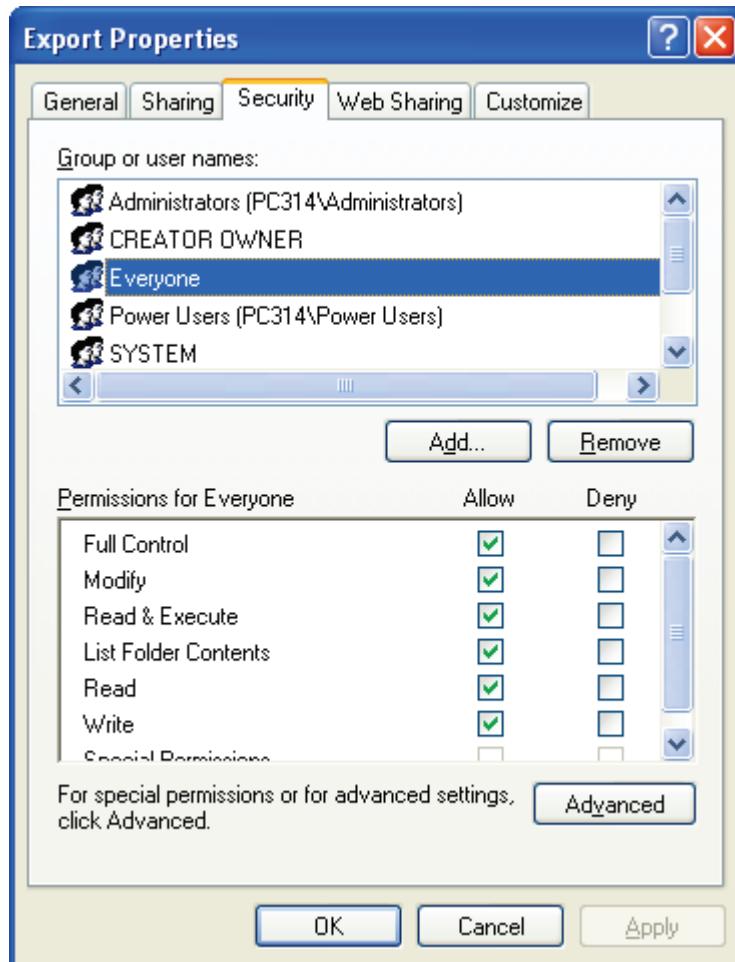


Figure 5.21 Backup folder rights for group Everyone

5.3.2 Restore Task

All backup files, made using the **Backup Task** function, can be restored.

If the LumaSoft Gas application is not started start it and login with username and password.



Figure 5.22 User Login

Select **Restore Task** in the **File** pull-down menu ([Figure 5.23](#)).

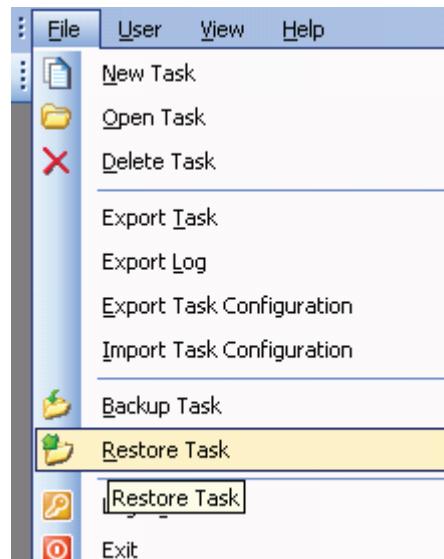


Figure 5.23 File pull-down: Restore Task Configuration

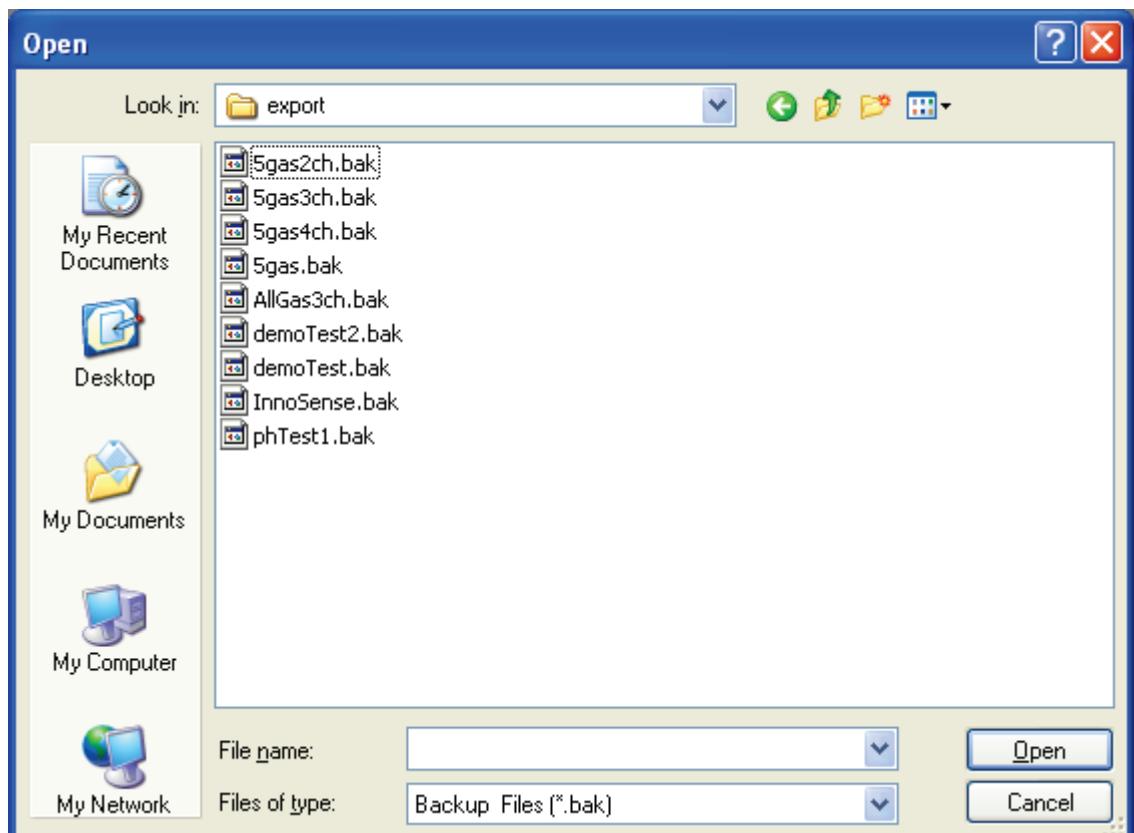


Figure 5.24 Folder/task file selection window

In Figure 5.24 select which of the stored tasks to restore and press **Open**.

In case that the task already exists in the SQL database the following message will appear, where it is possible if desired to confirm the overwriting of the existing task.

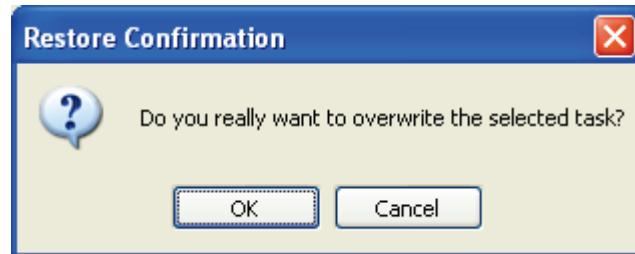


Figure 5.25 Confirm overwrite when restoring

5.3.3 Delete Task

If the LumaSoft Gas application is not started start it and login with username and password.



Figure 5.26 User Login

Select **Delete Task** in the **File** pull-down menu (Figure 5.27) or select the icon from the task bar.

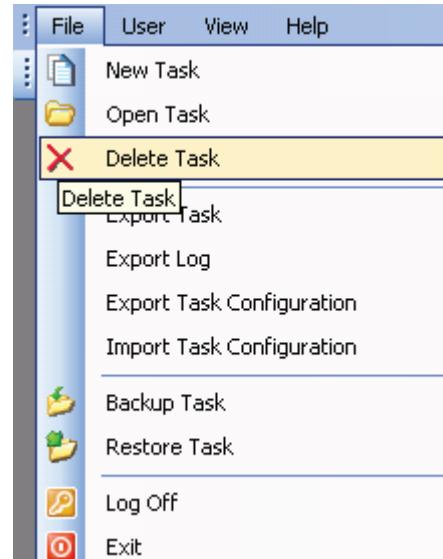


Figure 5.27 File pull-down: Delete Task

A window will appear showing all existing tasks.

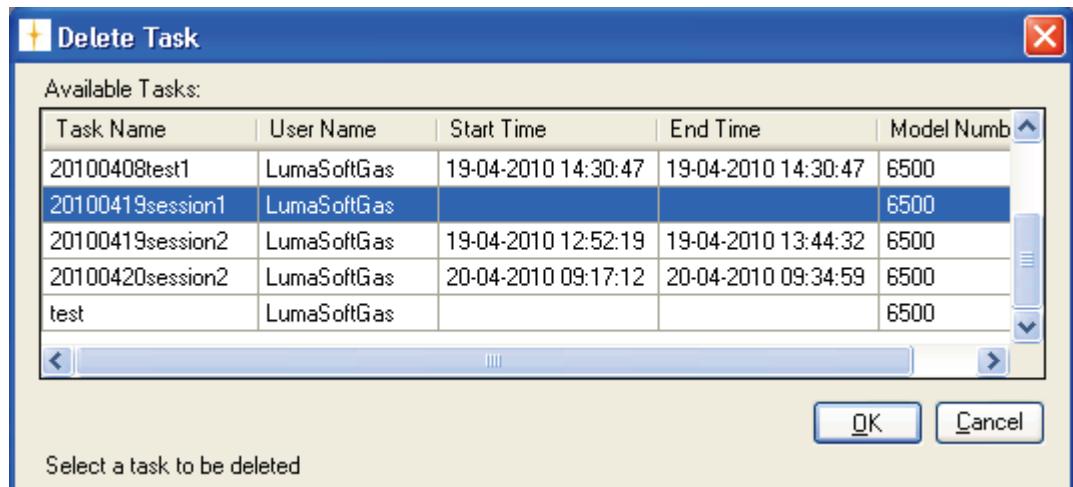


Figure 5.28 Task selection window

Select the task which should be deleted and press **OK** (See Figure 5.28). The following window will pop up to make sure that the user wants to delete the task.

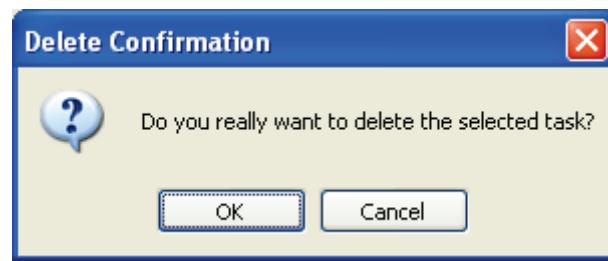


Figure 5.29 Press **OK** if the task should be deleted

5.4 Export Log

When not having a task open it is possible to export 2 types of logs into CSV (comma separated files), suitable for opening in Microsoft Excel.

The 2 types of logs, which can be exported, are:

- User Activities
- Errors Warnings

If the LumaSoft Gas 7950 application is not started start it and login with username and password.



Figure 5.30 User Login

Select **Export Log** in the **File** pull-down menu (Figure 5.31).

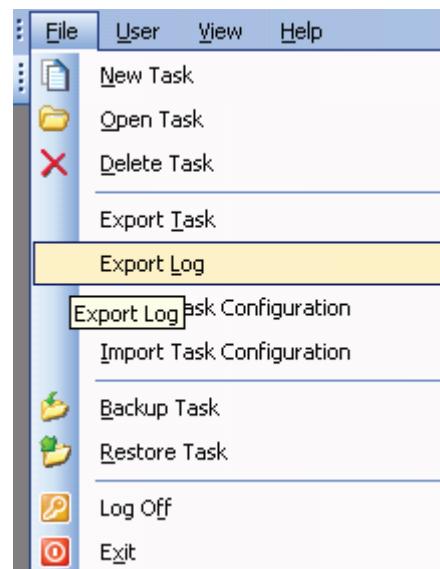


Figure 5.31 File pull-down: Export Log

The **Export Log** window opens, giving the possibility to export the 2 types of logs, see [Figure 5.32](#). A time interval for the log can also be specified.

The **User Activities** log shows the history for user actions ([Figure 5.35](#)).

The **Errors/Warnings** log shows error and warnings messages presented for the user ([Figure 5.34](#)).

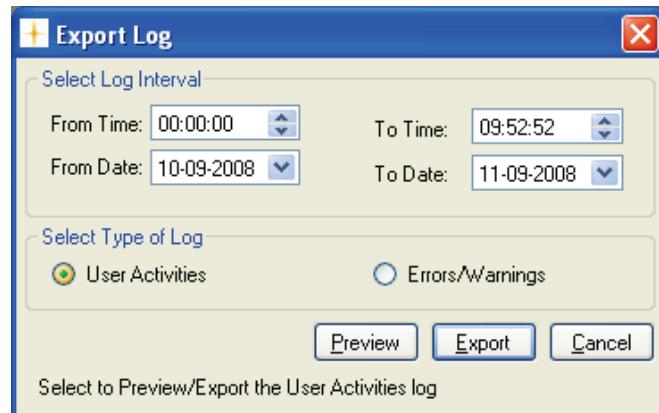


Figure 5.32 Export Log

Select one of the 2 log types in the **Select Type of Log** group box and select the **Export** soft-key to export to a CSV-file.

Select the folder where the log file should be saved, see Figure 5.33

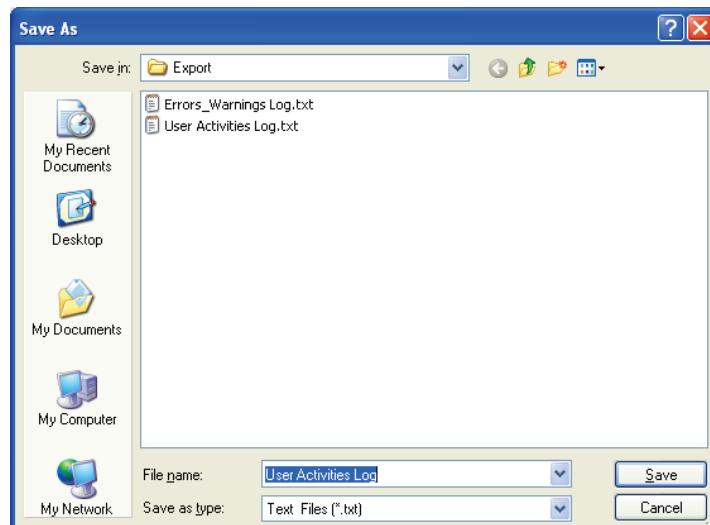


Figure 5.33 Folder/log file name selection window

Also a preview of the 2 log types can be made by using the **Preview** soft-key. See examples in [Figure 5.34](#) and [Figure 5.35](#).

User Activities Log	Errors/Warnings Log	Error/Warning Details
Date Time		
19-04-2010 10:59:47	Task name already exists.	
19-04-2010 10:59:59	Task name already exists.	
19-04-2010 11:03:45	Task name already exists.	
19-04-2010 12:51:50	Task name already exists.	
20-04-2010 08:26:43	Communication has failed with device having Serial Number: 980001. Measurement is Retried.	
20-04-2010 08:27:00	Communication has failed with device having Serial Number: 980001. Measurement is Retried.	
20-04-2010 08:27:01	Communication has failed with device having Serial Number: 980001. Measurement is Retried.	
20-04-2010 08:27:01	Communication has failed with device having Serial Number: 980001. Measurement will be continued with other devices.	
20-04-2010 09:15:22	No devices were found.	
20-04-2010 09:16:47	Task name already exists.	
20-04-2010 09:39:02	Please select at least one Channel to Export.	
20-04-2010 14:12:19	Either specified backup file path is invalid or SQL Server doesn't have sufficient rights to access the directory.	

Figure 5.34 Error/Warnings log preview

Chapter 5

User Activities Log		User Activity Details
Date Time	User Name	
19-04-2010 10:58:17	LumaSoftGas	User lumasoftgas has been successfully logged in.
19-04-2010 10:58:52	LumaSoftGas	Task: 20100419session1 has been successfully added.
19-04-2010 10:59:48	LumaSoftGas	Task: 20100419session1 has been successfully configured.
19-04-2010 10:59:59	LumaSoftGas	Task: 20100419session1 has been successfully configured.
19-04-2010 11:03:45	LumaSoftGas	Task: 20100419session1 has been successfully configured.
19-04-2010 11:20:30	LumaSoftGas	Task: 20100419session1 has been successfully closed.
19-04-2010 11:45:29	LumaSoftGas	User lumasoftgas has been successfully logged in.
19-04-2010 11:46:09	LumaSoftGas	Task: 20100408test1 has been successfully opened.
19-04-2010 11:46:17	LumaSoftGas	Numeric window has been successfully opened.
19-04-2010 11:46:56	LumaSoftGas	Measurement has been successfully started.
19-04-2010 11:46:57	LumaSoftGas	Notification from LumaSoft Gas 7950 to OPC server that measurement has started.
19-04-2010 12:49:59	LumaSoftGas	Measurement has been successfully stopped.
19-04-2010 12:49:59	LumaSoftGas	Notification from LumaSoft Gas 7950 to OPC server that measurement has stopped.
19-04-2010 12:50:26	LumaSoftGas	Task: 20100408test1 has been successfully closed.
19-04-2010 12:50:39	LumaSoftGas	Task: 20100419session2 has been successfully added.
19-04-2010 12:51:51	LumaSoftGas	Task: 20100419session2 has been successfully configured.
19-04-2010 12:52:14	LumaSoftGas	Numeric window has been successfully opened.
19-04-2010 12:52:42	LumaSoftGas	Measurement has been successfully started.
19-04-2010 12:52:42	LumaSoftGas	Notification from LumaSoft Gas 7950 to OPC server that measurement has started.
19-04-2010 13:15:43	LumaSoftGas	User event has been successfully updated.
19-04-2010 13:44:32	LumaSoftGas	Notification from LumaSoft Gas 7950 to OPC server that measurement has stopped.
19-04-2010 13:44:32	LumaSoftGas	Measurement has been successfully stopped.
19-04-2010 13:44:35	LumaSoftGas	Task: 20100419session2 has been successfully closed.
19-04-2010 13:44:44	LumaSoftGas	Task: 20100408test1 has been successfully opened.
19-04-2010 13:44:49	LumaSoftGas	Numeric window has been successfully opened.
19-04-2010 14:21:28	LumaSoftGas	User event has been successfully updated.
19-04-2010 14:31:12	LumaSoftGas	Measurement has been successfully started.
19-04-2010 14:31:12	LumaSoftGas	Notification from LumaSoft Gas 7950 to OPC server that measurement has started.
19-04-2010 14:35:29	LumaSoftGas	Alarm setup information has been successfully updated.
19-04-2010 14:49:16	LumaSoftGas	Export Task 20100408test1 to excel at the specified location is failed.
19-04-2010 14:54:08	LumaSoftGas	Export Task 20100408test1 to excel at the specified location is failed.
19-04-2010 15:16:11	LumaSoftGas	Task: 20100408test1 has been successfully exported into excel at the specified location.

Figure 5.35 User Activities log preview

Chapter 6

Warning and Error Messages

March 2011

Appendix A

Installation Guide

March 2011

1. When installing the LumaSoft Gas 7950 software you must be logged in as Administrator that means that you must have "administrator" rights.
Please also note that you must have Administrator rights or Power User rights to run the LumaSoft Gas application after installation.
2. Start the installation of LumaSoft Gas 7950. Insert the CD into the CD-drive and wait for auto-start of the CD. If auto-start is disabled run **LumaSoftGas7950Installer.exe** self-executable file on the installation CD to start the installation. It will automatically install all the necessary packages required to run the LumaSoft Gas 7950 application.

The installer will start unpacking with the following message.



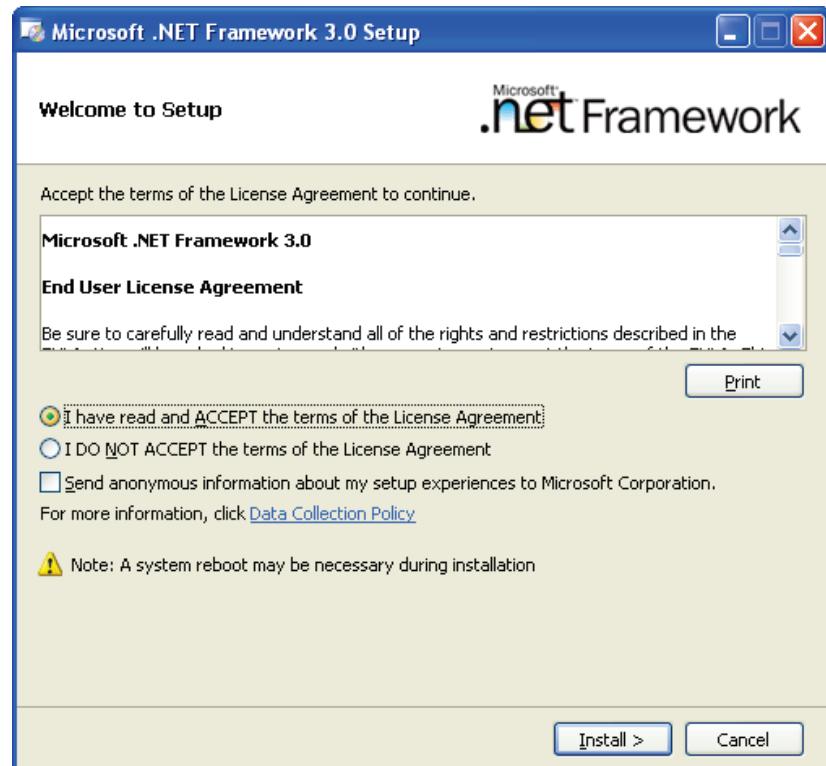
After starting the installer the following window appears after a while. Press the **OK** button to continue:



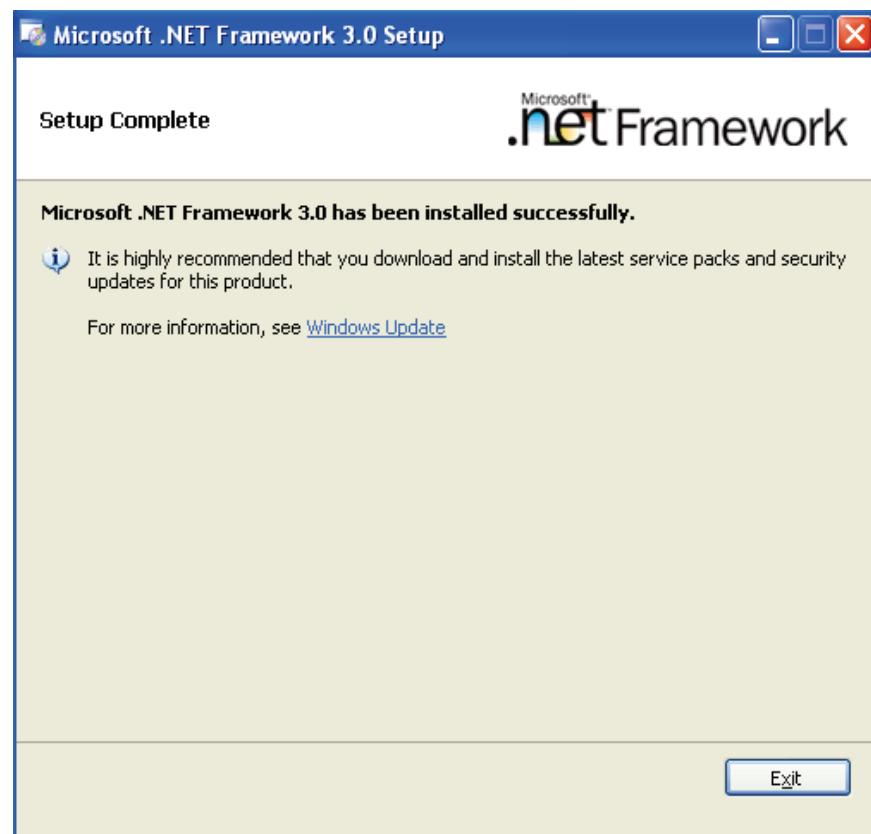
3. First installer will check for the ".NET 3.0 Framework", whether it is already installed on the target PC. It will install the ".NET 3.0 Framework" if it is not already installed otherwise it will skip the ".NET 3.0 Framework" installations. If ".NET 3.0 Framework" is already installed please continue to [step 4.](#) in this installation guide.

Click the "**I have read and ACCEPT the terms...**" and press the **Install** button to continue. Wait for the .NET Framework 3.0 to install. It will install silently (progress can be checked by double-clicking the  icon in the system tray in the lower right corner).

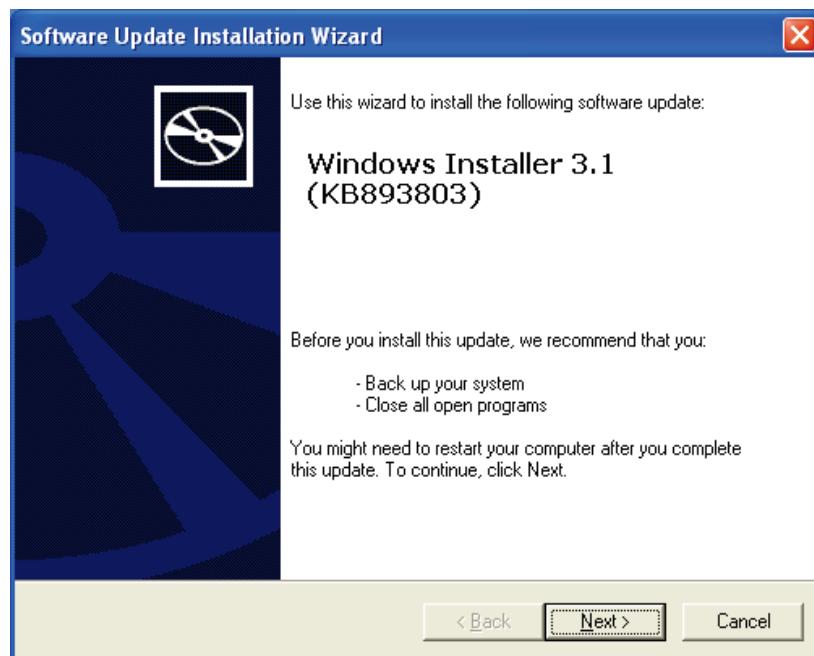
Appendix A



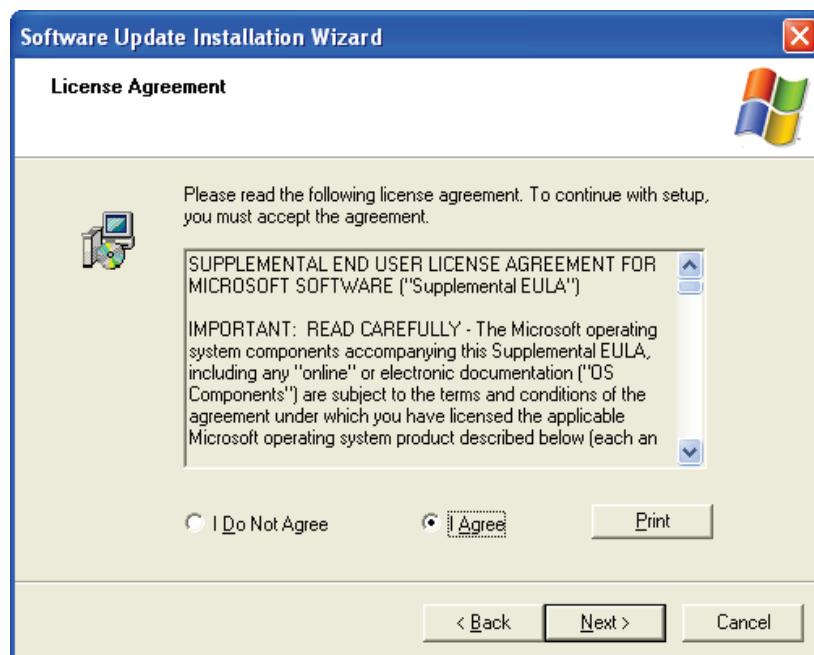
When ".NET 3.0 Framework" is installed the following window appears.
Press **Exit** to continue.



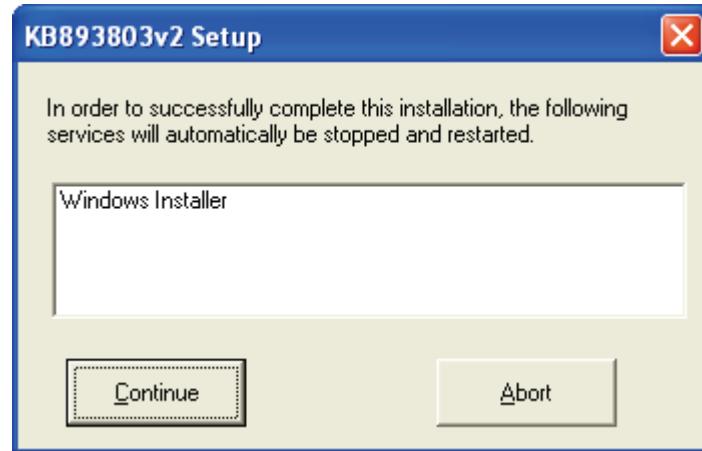
4. The installer will check for the "Windows Installer 3.1" or higher, if it is already installed on target PC or not. It will install the "Windows Installer 3.1" if it is not already installed otherwise it will skip the "Windows Installer 3.1" installations. If "Windows Installer 3.1" is already installed the following window will not appear and you can continue to [step 5.](#) in this installation guide.



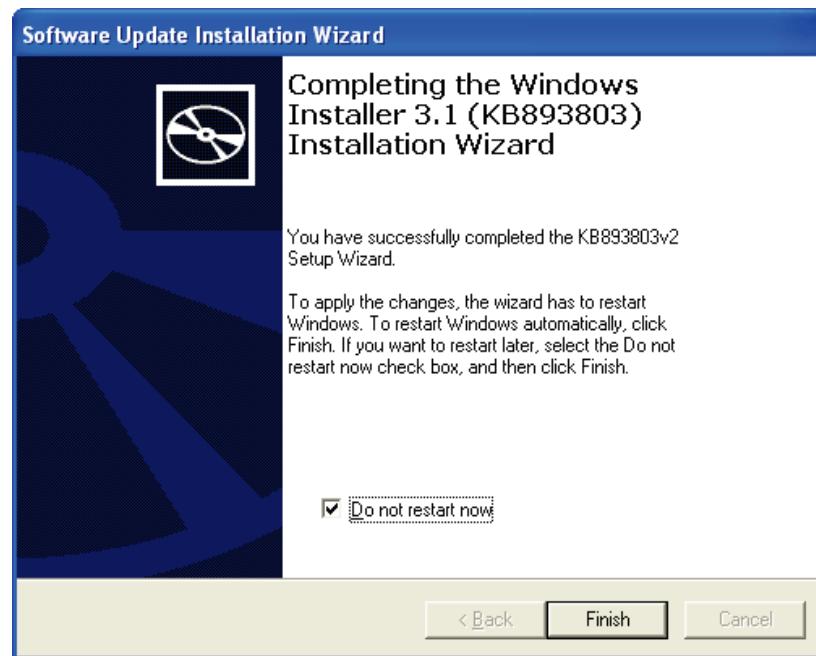
Press **Next** to continue. Select "**I Agree**" and press **Next** to continue.



Select **Continue**.



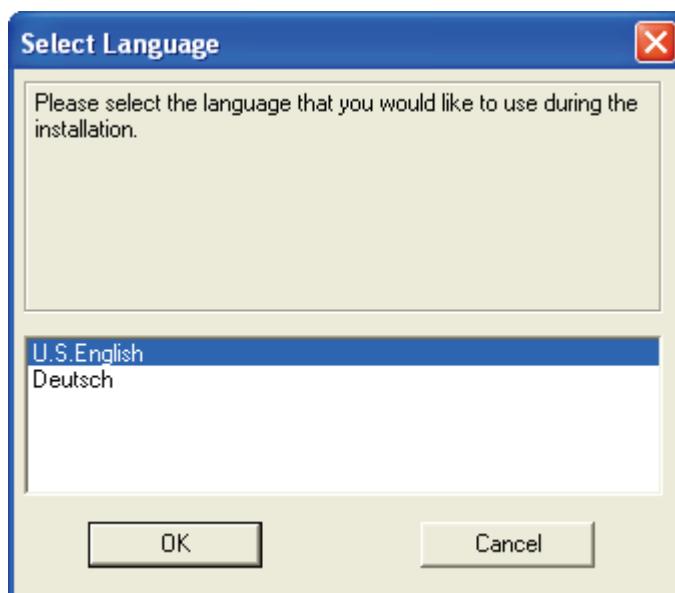
After installation of Windows Installer 3.1 tick "**Do not restart now**" and press **Finish**.



5. The installer will ask you to install “HASP security key driver”. **You can skip this if you have “HASP security key driver” already installed on the local PC.** If you select OK, it will start the installation.



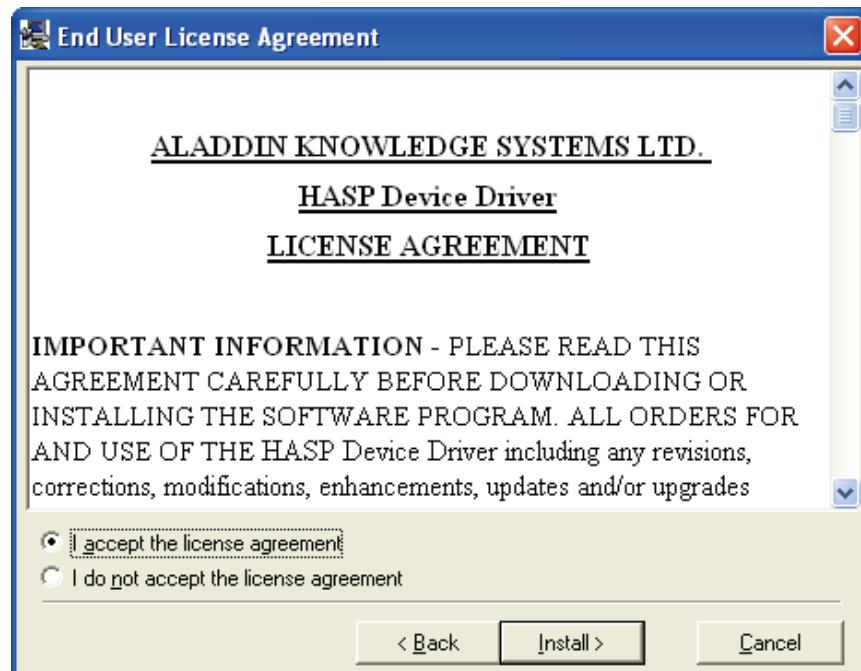
Select your preferred installation language and press **OK**.



Press **Next** to continue.



Choose "**I accept the license agreement**" and press the **Install** button.



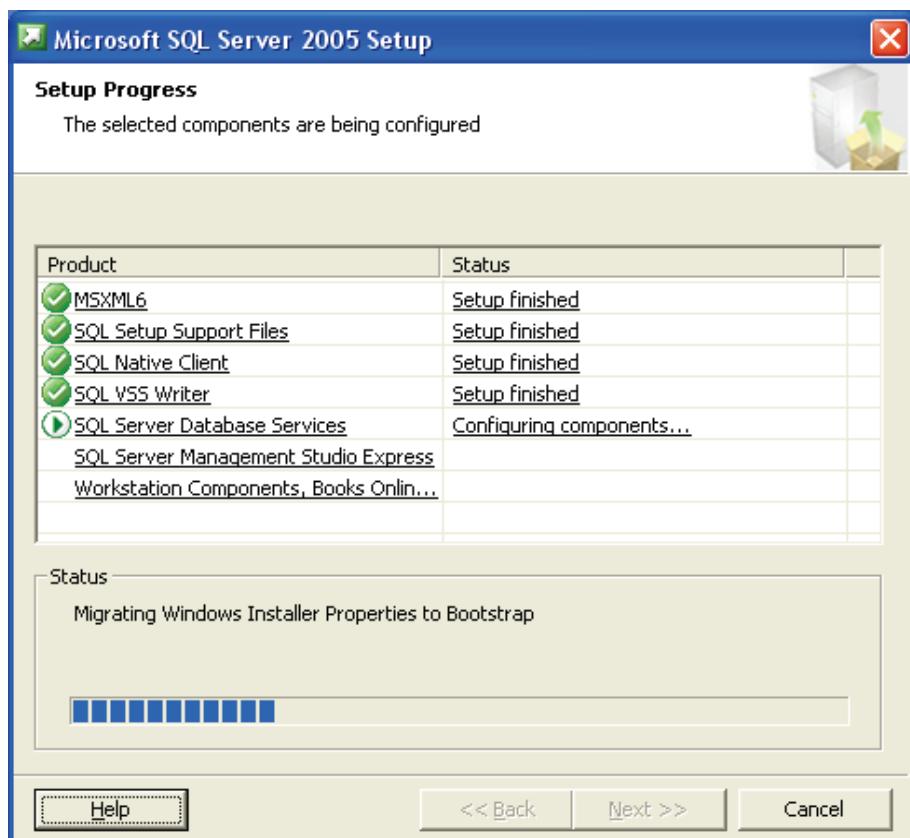
After installing the HASP key driver press **Finish**.



6. The following window will appear which prompts you to install the Microsoft SQL Server 2005 Express version. If the SQL Server 2005 Server Express already have been installed by a previous installation of the LumaSoft Gas 7950 you can skip this by pressing the **Cancel** button and proceed to step number 8 in this appendix. Otherwise press the **OK** button to install the "SQL-Express 2005" database.



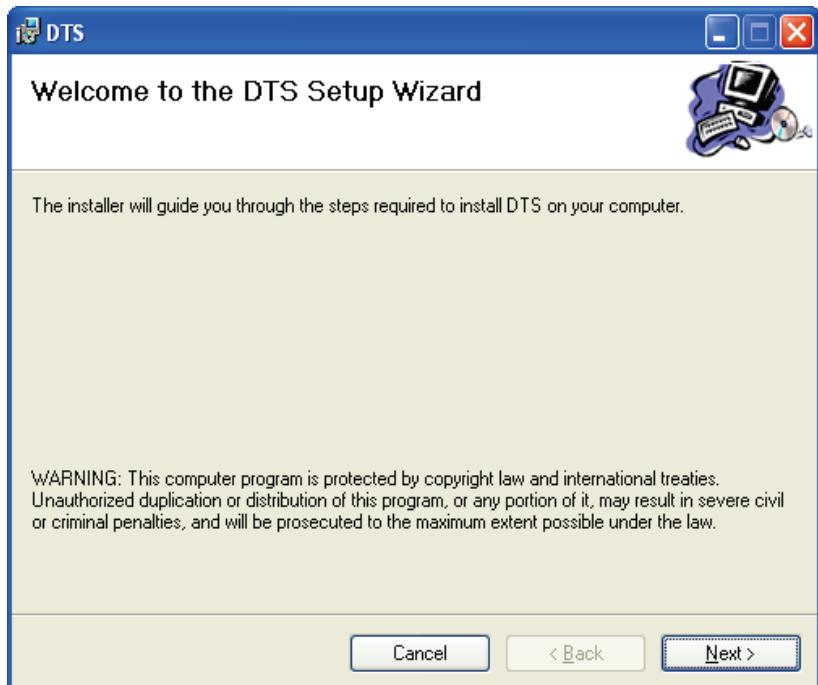
Then wait for the installation of the SQL-Express 2005 database to finish.



7. After installing "SQL-Express 2005", the following window appears. **Press the OK button** to continue.

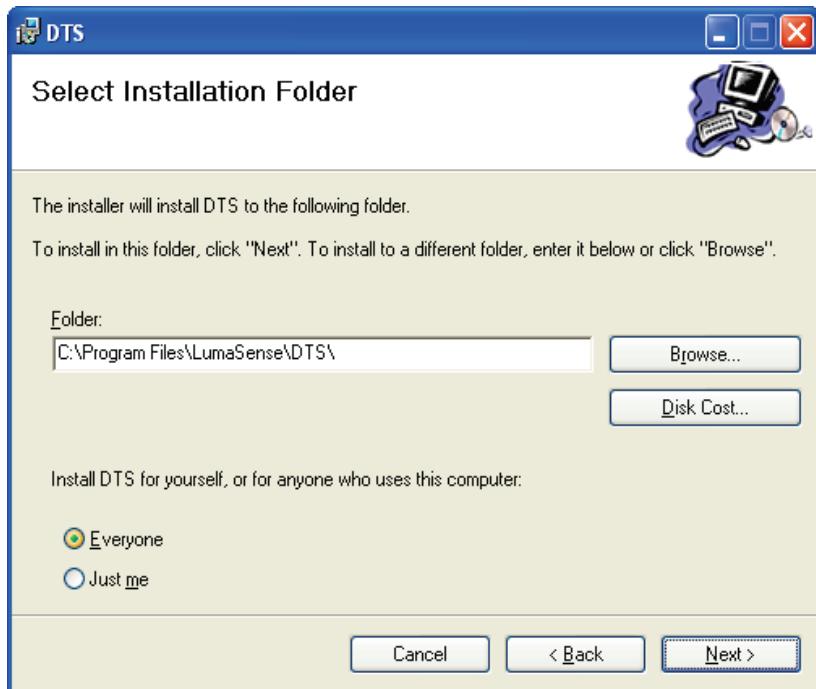


8. The installer will install the DTS server. Press **Next** to continue.

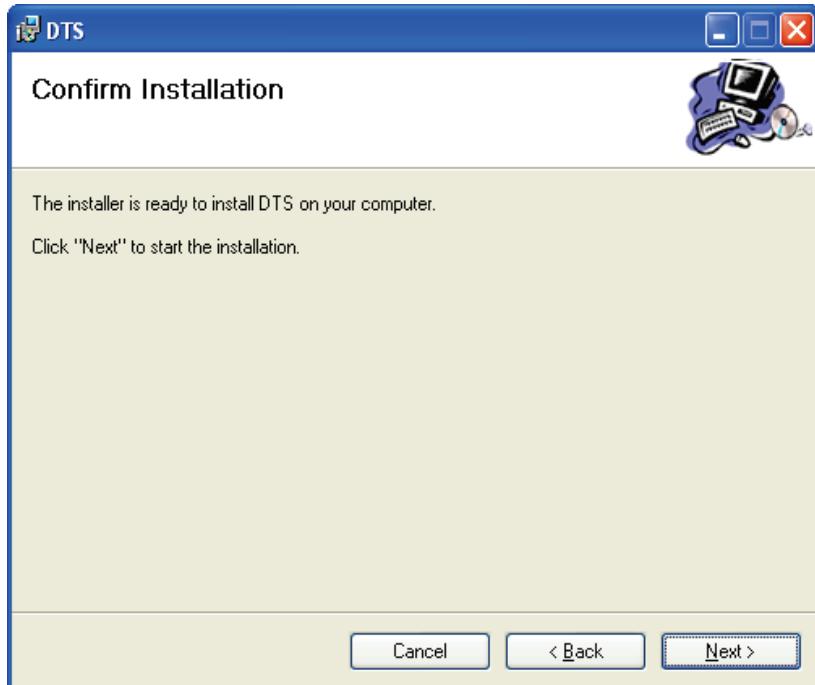


Select install for **Everyone** and press **Next**

Appendix A



Select **Next** to confirm installation of DTS.



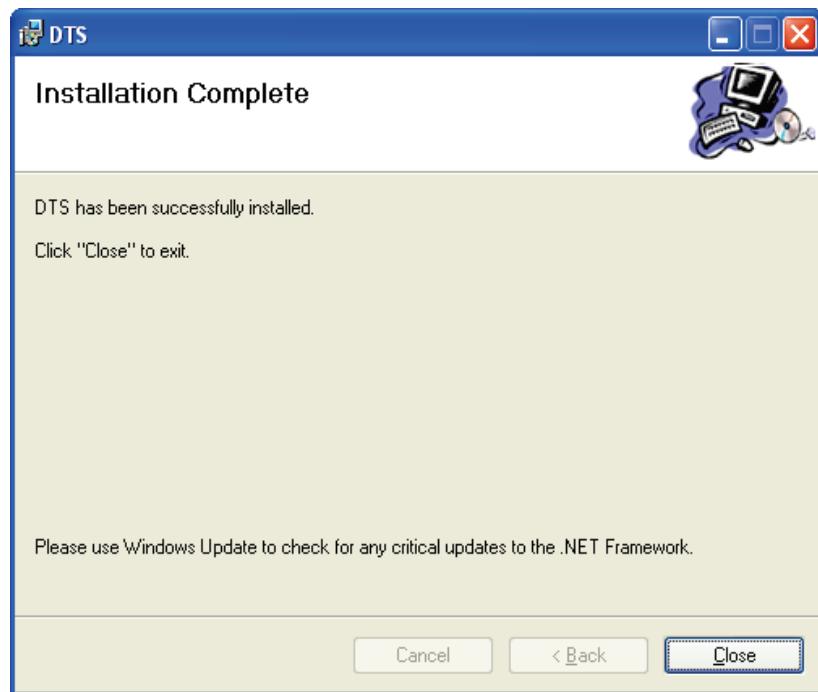
During installation of DTS the following window will appear which you just can leave unattended.

A screenshot of a Windows Command Prompt window titled "cmd.exe" with the path "C:\WINDOWS\system32\cmd.exe". The window contains the following text:

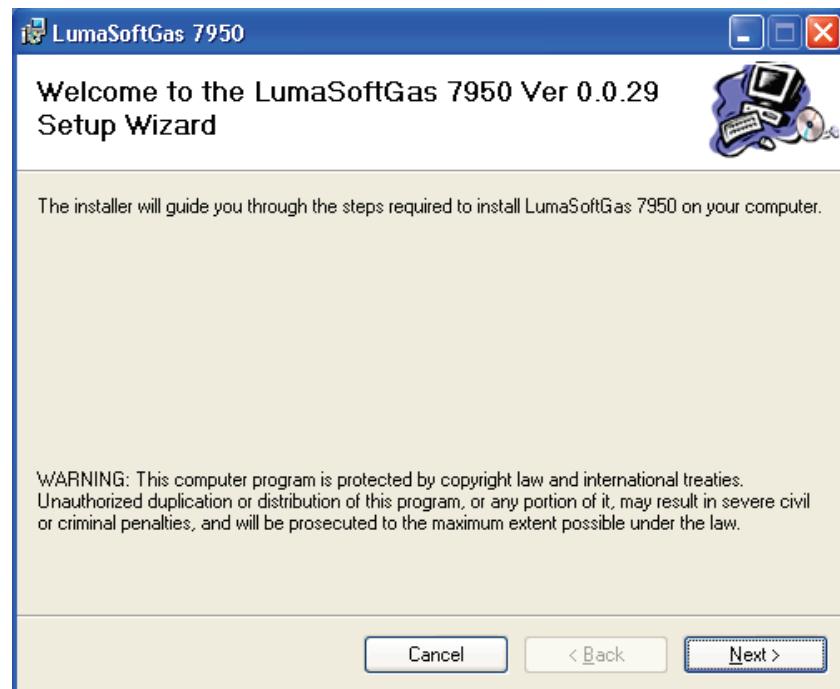
```
C:\Program Files\LumaSense\DTS>LumaSenseOPCWrapper.exe /UnRegServer  
C:\Program Files\LumaSense\DTS>LumaSenseOPCWrapper.exe /RegServer  
C:\Program Files\LumaSense\DTS>Opc.ConfigTool.exe -ua LumaSenseOPCDaServer.dll
```

The window has a standard Windows title bar and scroll bars on the right side.

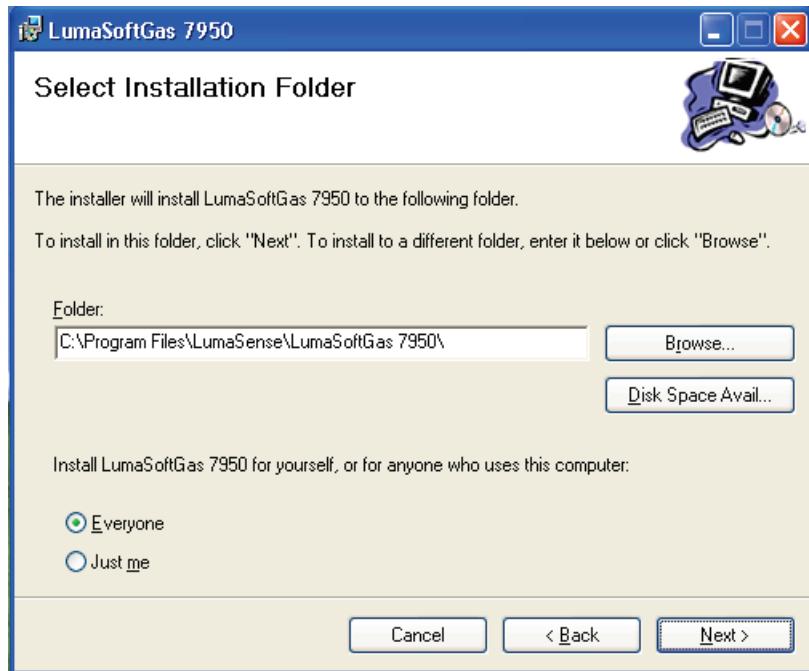
After installation of DTS press **Close**.



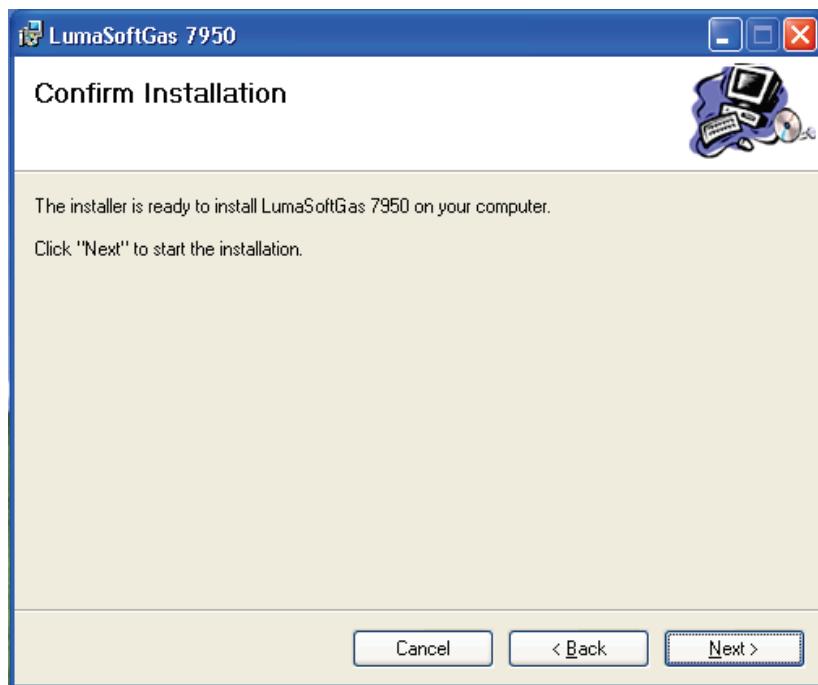
9. After successful installation of DTS server the LumaSoft Gas installation will start. Press **Next** to start installation of LumaSoftGas 7950.



Select install for **Everyone** (default selection) and press **Next**

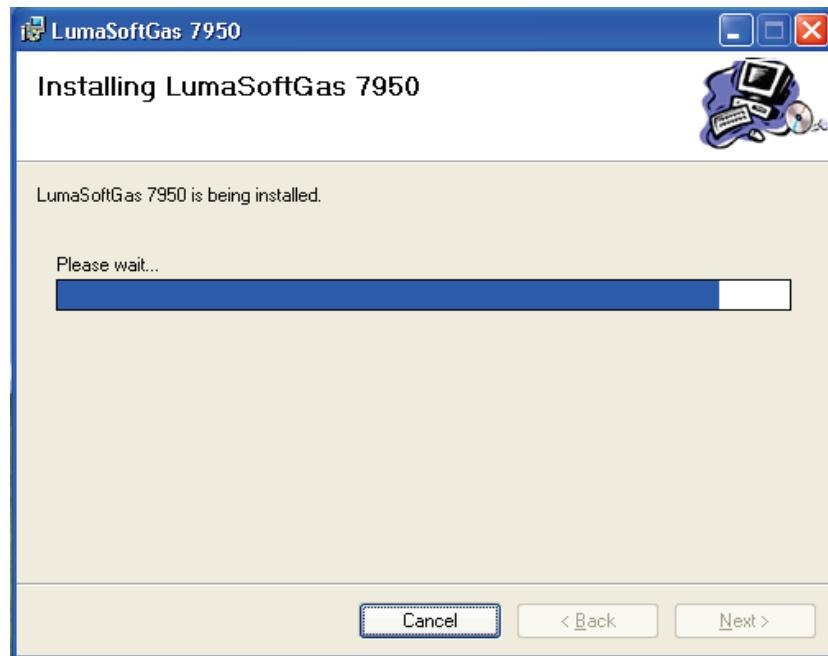


Select **Next** to confirm installation of LumaSoftGas 7950

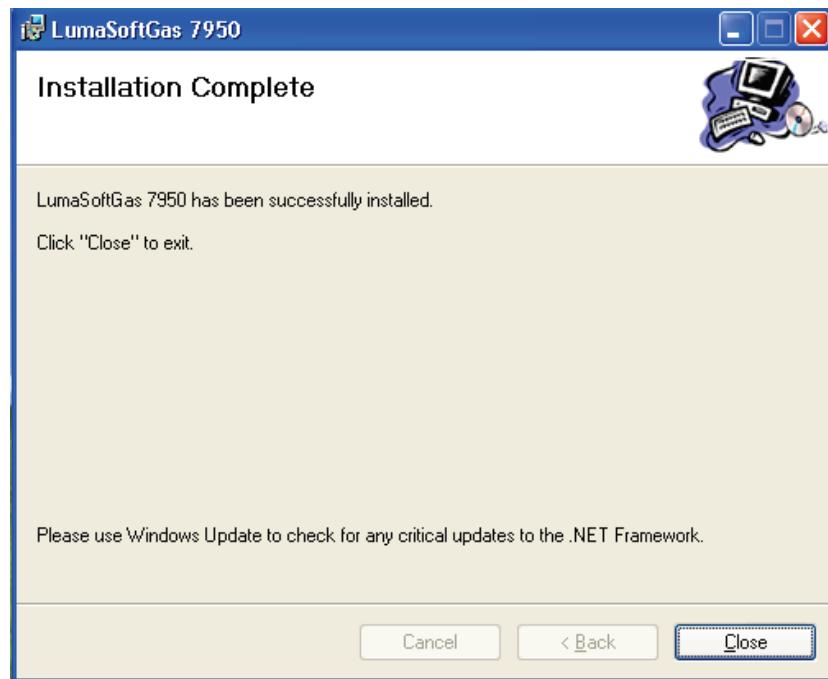


Appendix A

During installation the following window will appear which you can leave unattended.



After installation of LumaSoftGas 7950 press **Close**.

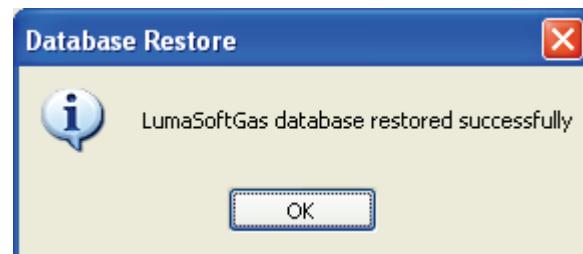


- 10.** The following window will appear. The text you can ignore. Press **OK** to proceed.

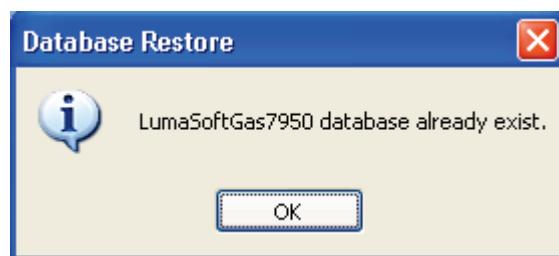


- 11.** Now the LumaSoftGas 7950 database will be installed on your local PC. This will take a while.

- 12.** After successful installation of the database the following message appears.



If you get the following message the database already was installed in a previous installation.



- 13.** Installation of the LumaSoftGas 7950 software was successful if all the installation succeeded.

You press **OK** to finish the installation.



- 13A.** Installations failed if there was any error during the installation.

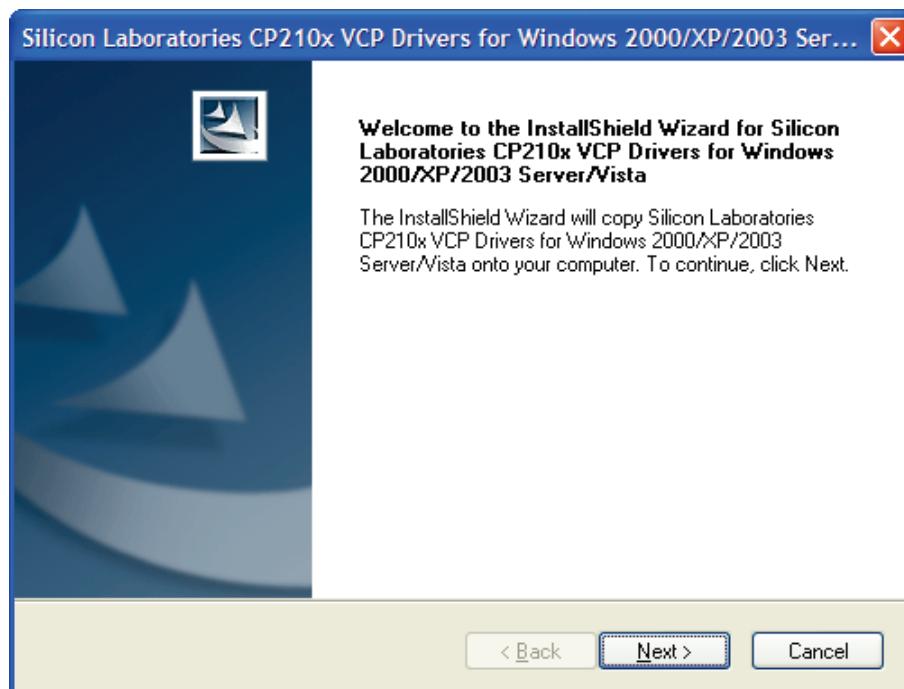
This finalises the installation of the LumaSoftGas 7950 software.

14. Installing the USB driver for the 1316 Gas Monitor.

Before connecting the 1316 monitor the USB driver for the 1316 USB interface must be installed.

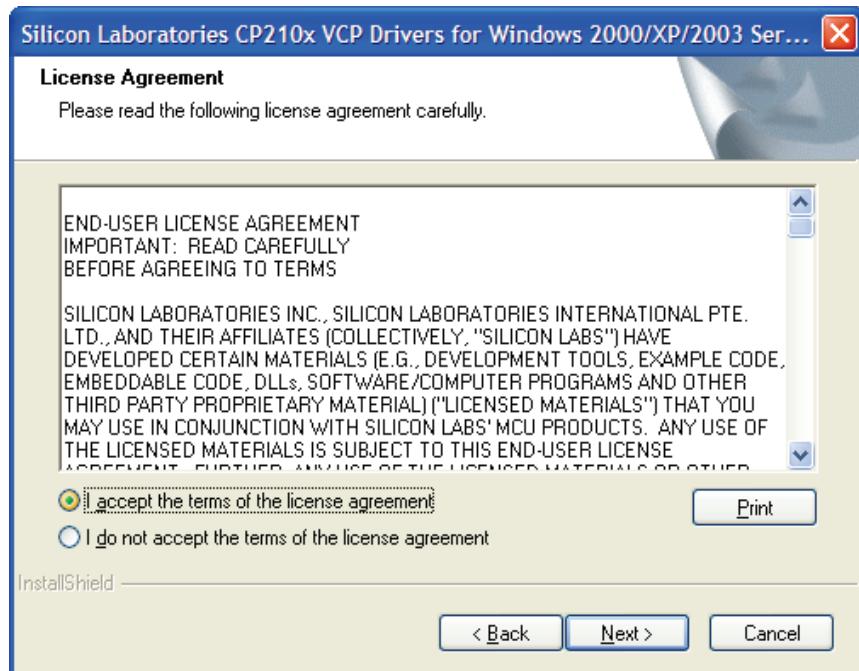
14A. Insert the “USB Windows driver for Multi Gas Monitor – INNOVA 1316” CD-ROM disk into the CD-ROM drive and wait for the auto-start of the USB driver. In case that auto-start is disabled for your CD drive, you will manually need to start the executable driver file named “CP210x_VCP_Win2K_XP_S2K3.exe” found on the software CD-ROM disk.

14B. After a while the welcoming window appears. Select ‘Next’ to continue installation.

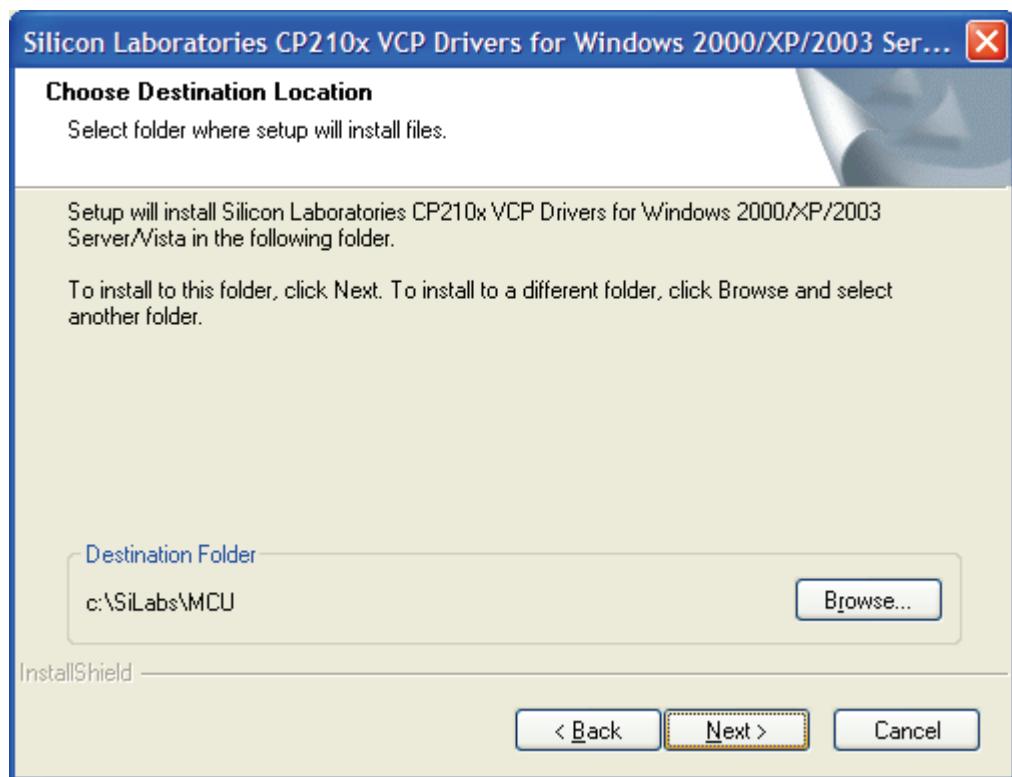


14C. In the “License Agreement” window accept the terms. Select ‘Next’ to continue installation.

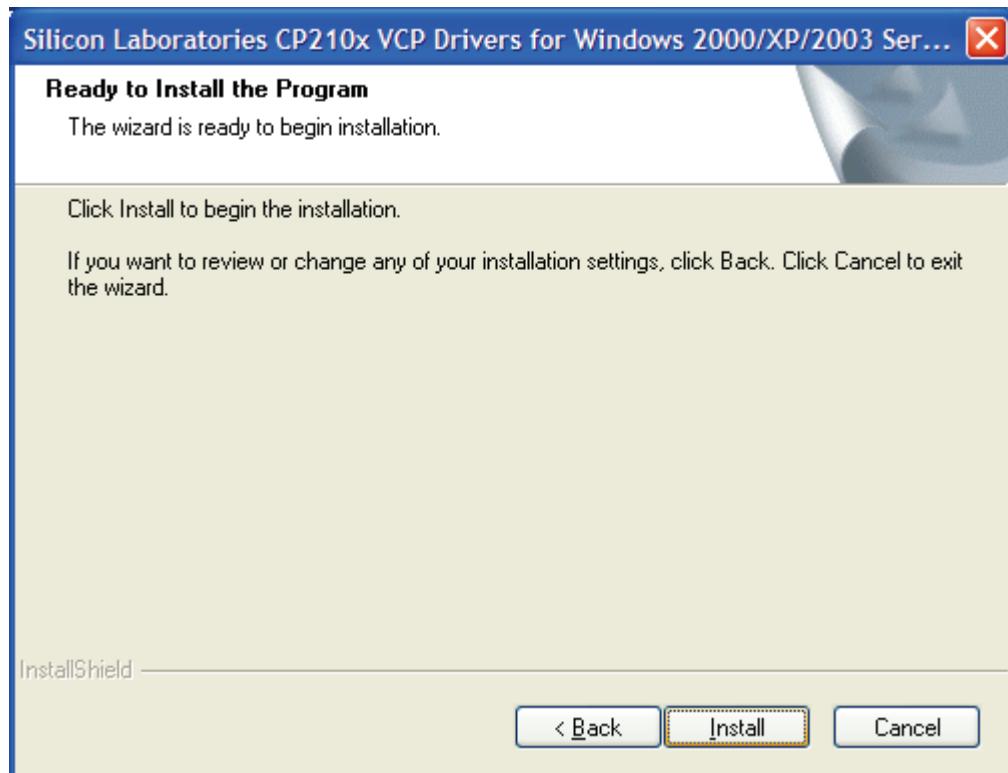
Appendix A



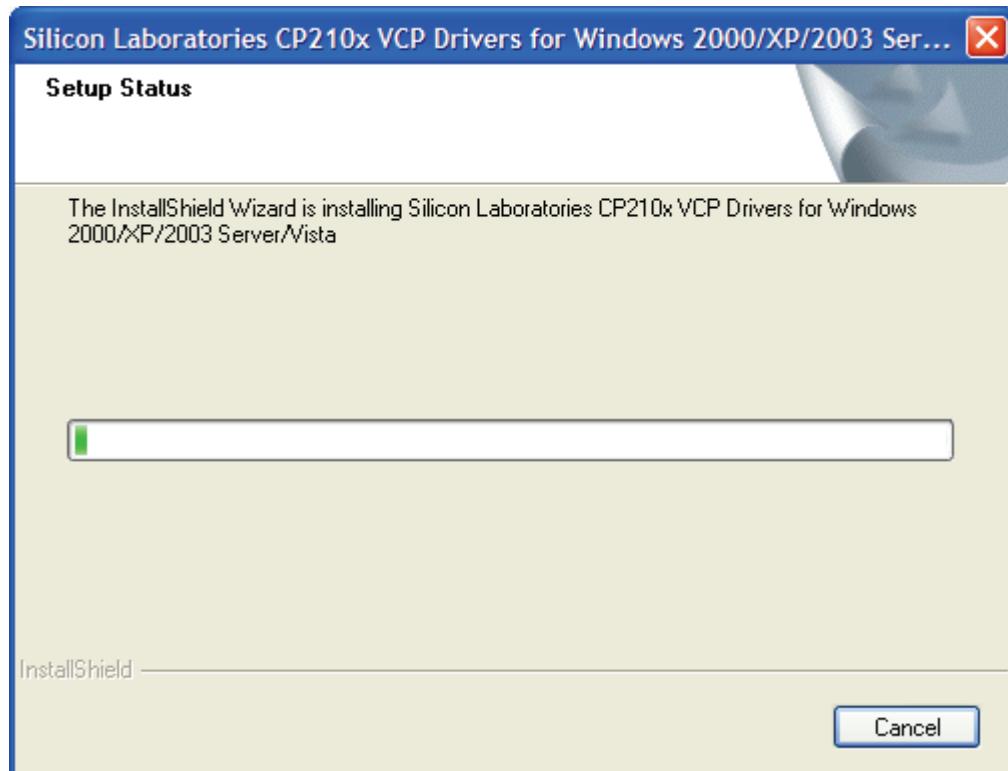
14D. In the “Choose Destination Location” window select ‘Next’ to continue installation.



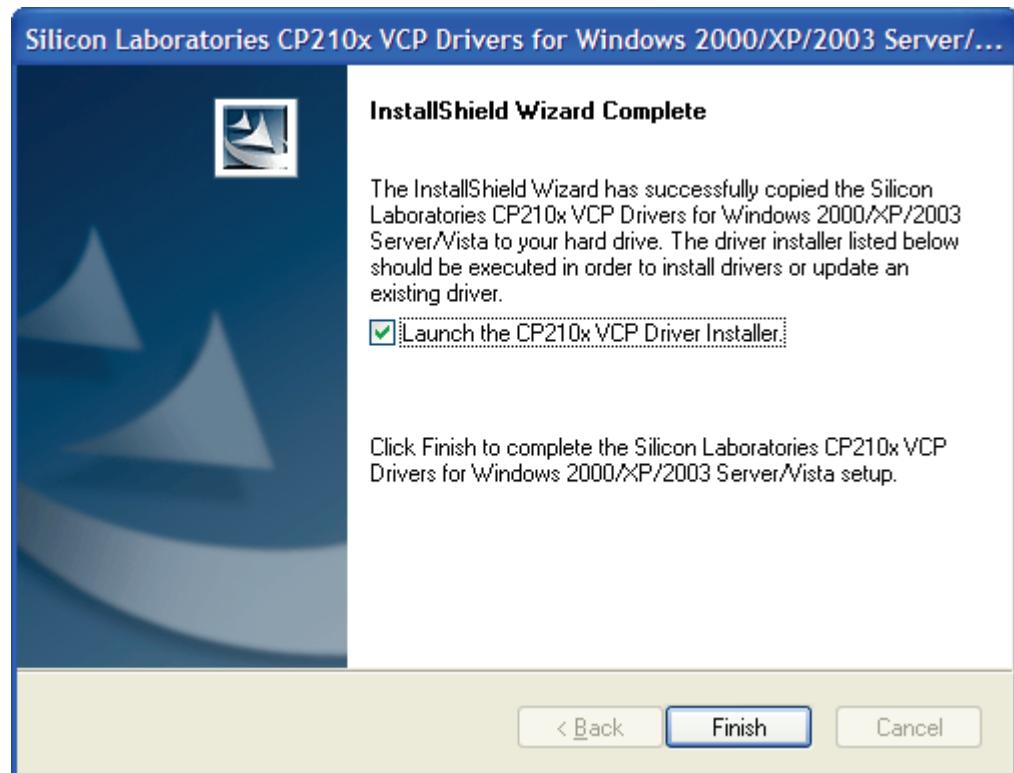
14E. In the “Ready to Install the Program” window select ‘Next’ to continue the installation.



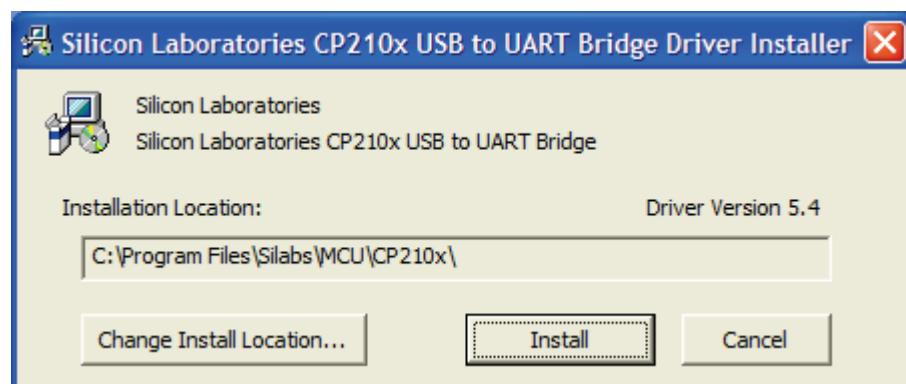
14F. Wait for the “Setup Status” window to finish.



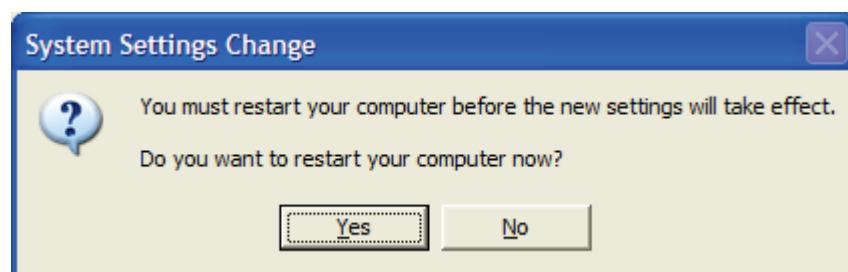
14G. In the “InstallShield Wizard Complete” window select ‘Finish’ to continue the installation. Please do not un-tick or change the “Launch the CP210x VCP Driver Installer” setting.



14H. In the following pop-up window select 'Install' to install the USB driver for 1316.



14I. After installing the USB driver for 1316 you are asked to restart your PC.



14J. This concludes the installation of the USB driver for the 1316.

Appendix B

Remote SQL Server database installation

March 2011

This appendix explains how to configure LumaSoft Gas 7950 to have its database on a foreign PC's SQL database server.

B.1 Remote installation of the LumaSoft Gas database

The LumaSoft Gas database, which keeps and stores all the task and measurement data, is by **default** resident on the same PC as the LumaSoft Gas 7950 application.

Default in the meaning that the installer package will automatically install the database on the same PC as the LumaSoft Gas 7950 application.

It is possible to configure the LumaSoft Gas application to have the LumaSoft Gas database on a foreign PC's **SQL Database Server** accessible through the network.

B.2 Finding the Computer name of the foreign PC

In order to configure the LumaSoft Gas application to recognize the database on the foreign PC you need to know its **Computer Name**.

On the foreign PC please do the following.

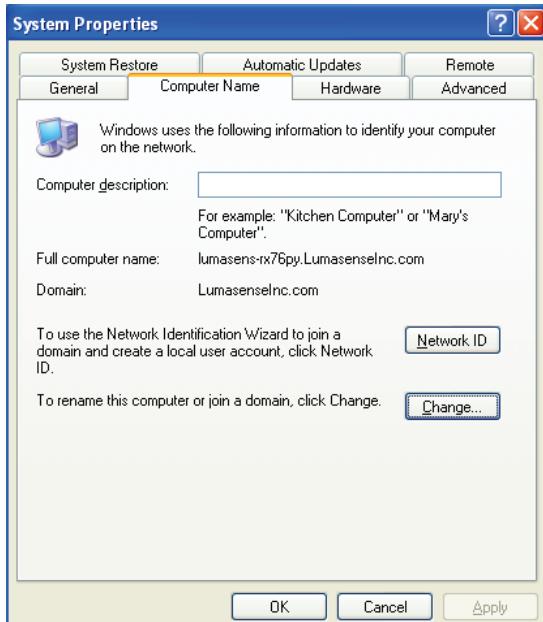
On **Windows XP**: Select **start-> My Computer-> right click-> Properties**



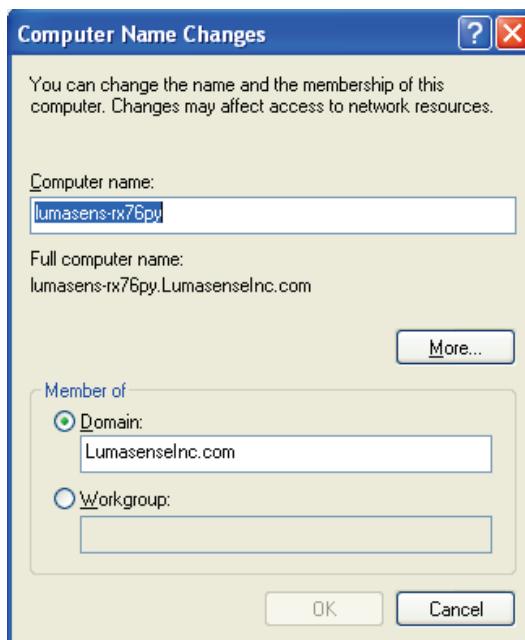
On **Windows Vista**: Select **Start-> Computer-> right click-> Properties**

Select the **Computer Name** tab.

On **Windows Vista**: Observe “**Computer name:**” and **write it down for later use**. Close the **System** window. Continue with the last line on this page.



Click the **Change** button to open the **Computer Name Changes** window



Observe the **Computer name** and **write it down for later use**.

Close the windows **Computer Name Changes** and **Computer Name**.

B.3 Restore(Store) the database onto a foreign PC's SQL Server

To install the database on the SQL Server on a foreign PC

After successful installation of the LumaSoft Gas software package the LumaSoft Gas Database Restore utility will appear to restore the LumaSoftGas database. Here you need to restore the LumaSoftGas database.

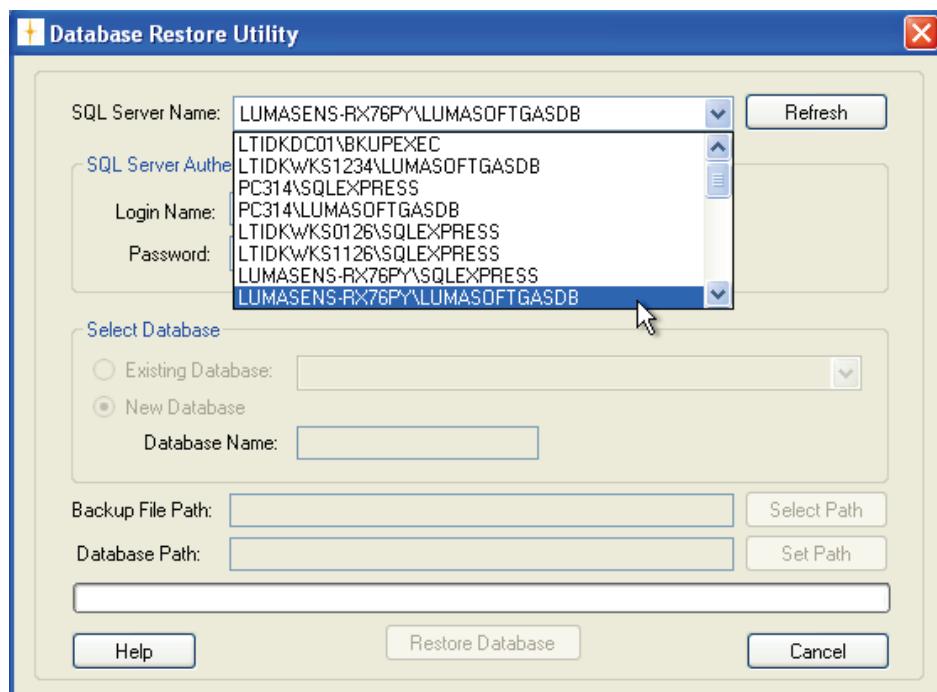
Start the **Database Restore** utility using:

- Go to Start -> Program -> LumaSense -> Database Restore click LumaSoftGas Database Restore.



- LumaSoftGas Database Utility dialog will appear.

The **Database Restore Utility** window opens.



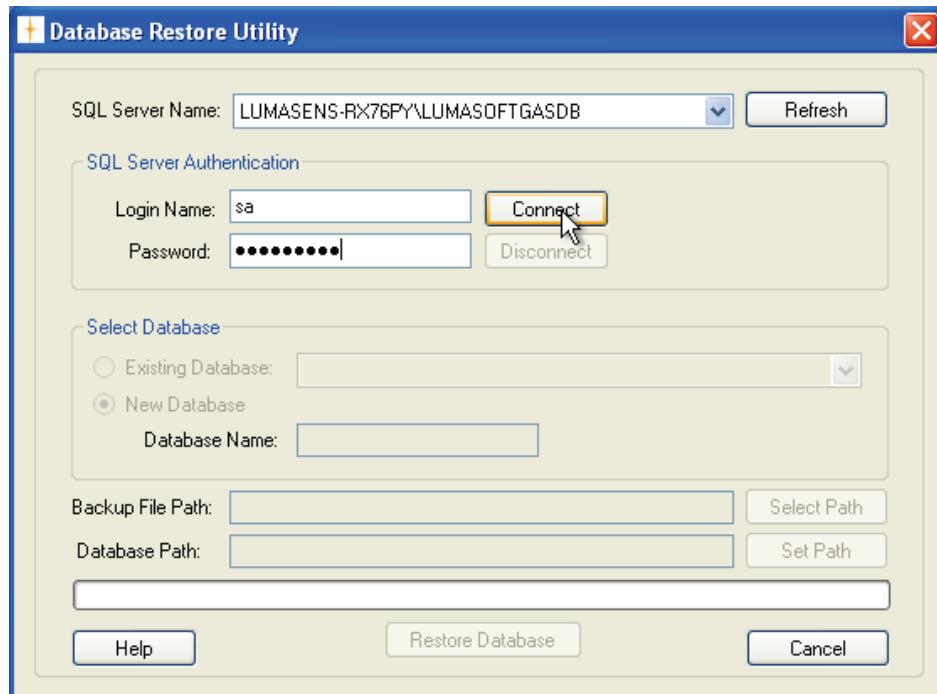
After a while the "**SQL Server Name**" presents a list of SQL Server database instances found on the local PC and on the network.

Select the **Computer Name** found on the foreign PC (that is use the Computer Name as you have written down in the last [section B.2](#)). In this example it is named "LUMASENS-RX76PY".

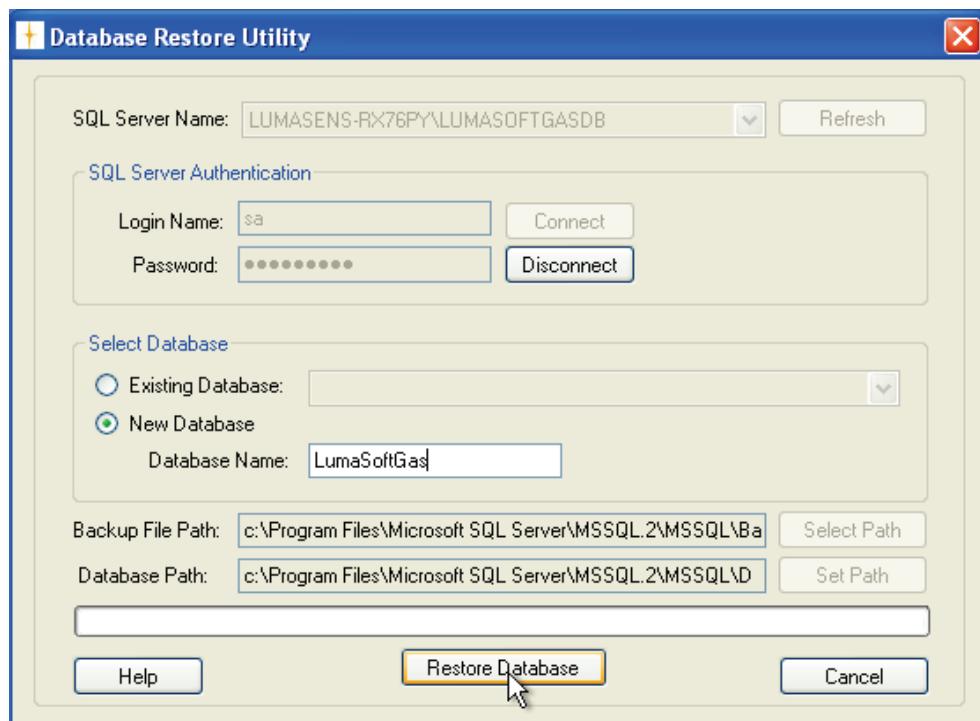
Appendix B

If no SQL server database list appears after a while you can select the "Refresh" button to again look for SQL Server database instances.

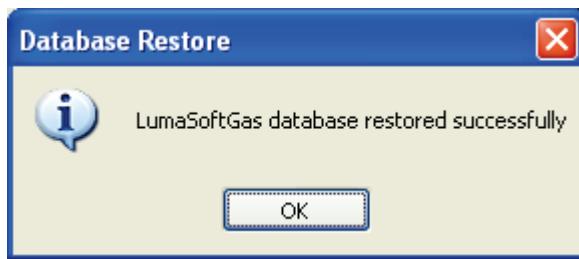
Use the Login Name: **sa** and Password: **Lumasoft1** and press the "Connect" button.



After connect you type the Database Name: **LumaSoftGas** and select the "Restore Database" button. Please observe that upper and lower case letters in the Database Name is important.



After successful restore of the database the following message appears.



B.4 Configure LumaSoft Gas 7950 to use a database on a foreign PC's SQL Server

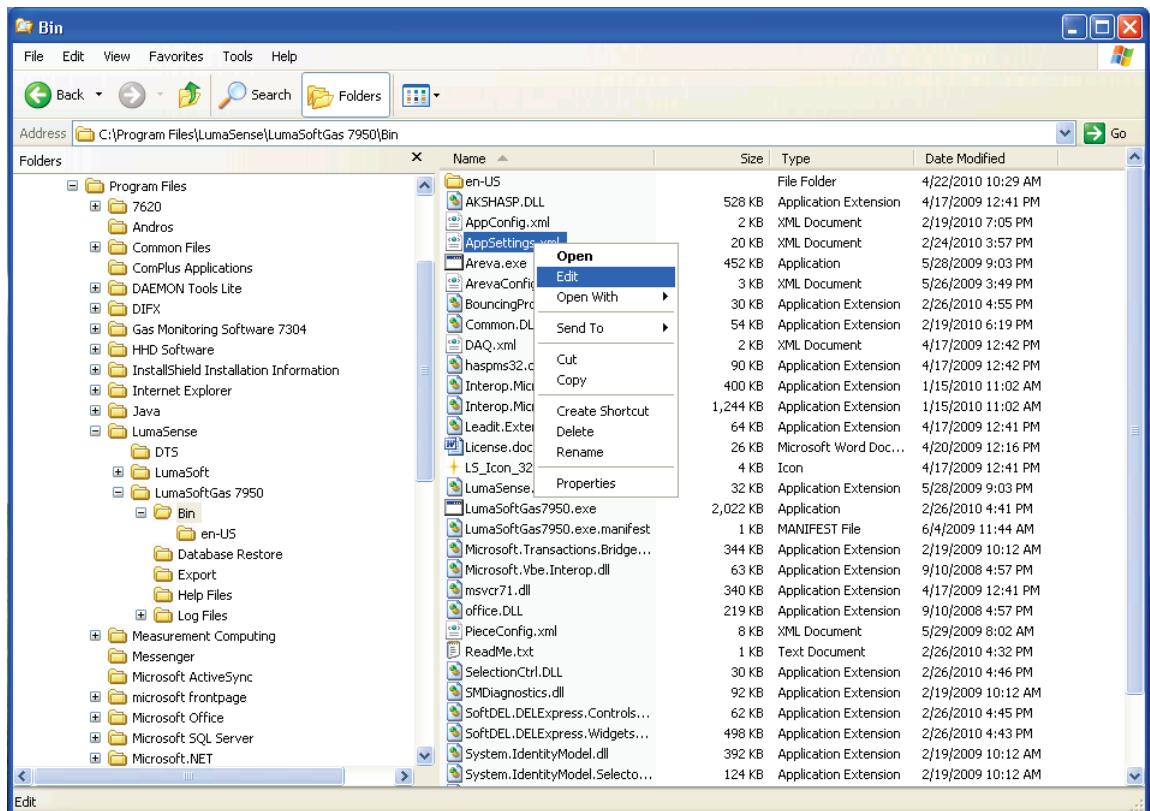
If you have the SQL Server installed on a remote PC, the Database connection setting must be changed as per the installation of SQL-Express 2005. To do so you need to change the DataBase-Parameter in **AppSettings.xml** file.

You can find this file inside the

"*Installation Directory*\LumaSense\LumaSoftGas 7950\Bin" directory.

Where "*Installation Directory*" is the installation path selected during installation procedure, normally "c:\Program Files"

Use the Windows Explorer to open and edit the "**AppSettings.xml**"



Appendix B

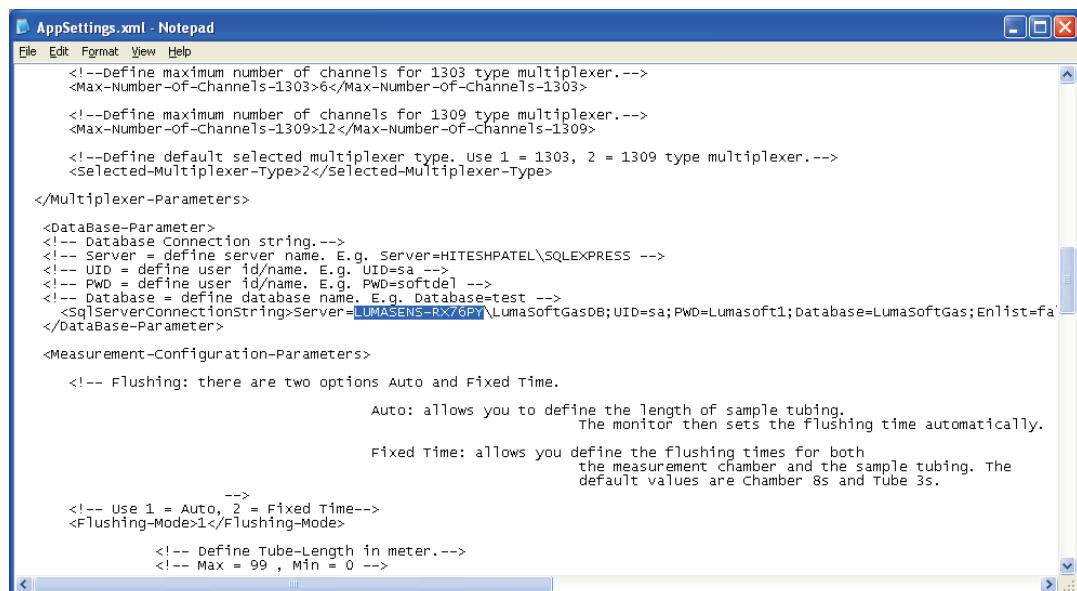
Do a file search for the <DataBase-Parameter> tag and modify the contents of <SqlServerConnectionString> tag. Here the Server= setting must be changed. Do not modify the rest of the settings of the <SqlServerConnectionString> tag.

Server is the name of the PC where the SQL Express database is installed. If the SQL Express database is installed on the same PC that the LumaSoft Gas software is installed on, then "Server" should be given the name of your local PC (Computer Name). If the SQL Express database is installed on a foreign PC than LumaSoft Gas software is installed on, then "Server" should be given the name of the foreign PC.

The Server name (Server) should be specified as:

<name of PC with SQL Express database>\LUMASOFTGASDB

If for instance the PC (use the Computer Name you have written down) with the SQL Server is named LUMASENS-RX76PY, the Server setting should be modified like shown below in bold.



The screenshot shows a Windows Notepad window titled "AppSettings.xml - Notepad". The content of the file is an XML configuration snippet. It includes sections for multiplexer parameters, database parameters, and measurement configuration parameters. A specific section for the database connection string is highlighted, showing the 'Server' attribute set to "LUMASENS-RX76PY". A note in the code indicates that the server name should be the computer name. Below the XML, there is explanatory text about flushing modes: Auto (allowing the monitor to set times automatically) and Fixed Time (allowing definition of times for chamber and sample tubing, with default values of 8s and 3s respectively). The XML code also defines tube length in meters (Max = 99, Min = 0).

```
<!--Define maximum number of channels for 1303 type multiplexer.-->
<Max-Number-Of-Channels-1303>6</Max-Number-Of-Channels-1303>

<!--Define maximum number of channels for 1309 type multiplexer.-->
<Max-Number-Of-Channels-1309>12</Max-Number-Of-Channels-1309>

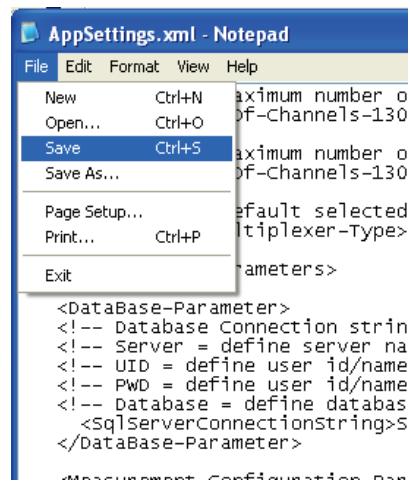
<!--Define default selected multiplexer type, use 1 = 1303, 2 = 1309 type multiplexer.-->
<Selected-Multiplexer-Type>2</Selected-Multiplexer-Type>

</Multiplexer-Parameters>

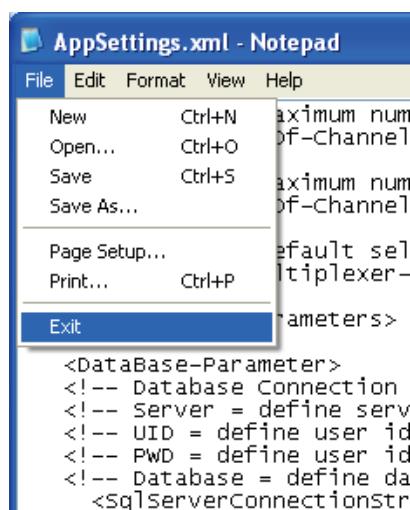
< DataBase-Parameter>
<!-- Database Connection string.-->
<!-- Server = define server name. E.g. Server=HITESHPATEL\SQLEXPRESS -->
<!-- UID = define user id/name. E.g. UID=sa -->
<!-- PWD = define user id/name. E.g. PWD=softdel -->
<!-- Database = define database name. E.g. Database=test -->
<SqlServerConnectionString>Server=LUMASENS-RX76PY\LucasSoftGasDB;UID=sa;PWD=Lumasoft1;Database=LumaSoftGas;Enlist=false</SqlServerConnectionString>
</ DataBase-Parameter>

< Measurement-Configuration-Parameters>
    <!-- Flushing: there are two options Auto and Fixed Time.
        Auto: allows you to define the length of sample tubing,
              The monitor then sets the flushing time automatically.
        Fixed Time: allows you define the flushing times for both
                    the measurement chamber and the sample tubing. The
                    default values are Chamber 8s and Tube 3s.
    -->
    <!-- Use 1 = Auto, 2 = Fixed Time-->
    <Flushing-Mode>1</Flushing-Mode>
    <!-- Define Tube-Length in meter.-->
    <!-- Max = 99 , Min = 0 -->
```

Save the change.



Exit the editor.



Appendix C

OPC Server Tags

March 2011

Appendix C

This appendix contains a list of all the OPC Server tags offered by the LumaSoft Gas 7950.

These tags will be active when a measurement is running.

The tags are listed in ascending order according to the numerical part of the OPC ItemID.

The 7950 OPC server conforms with the OPC DA (Data access) version 3.0 as well as the previous versions 1.0 and 2.0.

OPC Server Tags		
Tag Name	Data type	OPC ItemID
Channel 1 In Use Flag	Boolean	Channel 1/InUseFlag/1000000
Channel 1 Gas A Concentration	Float	Channel 1/GasA/Concentration/1010100
Channel 1 Gas A Unit	String	Channel 1/GasA/Unit/1010200
Channel 1 Gas A Alarm HH occurred	Boolean	Channel 1/GasA/AlarmHHOccurred/1010300
Channel 1 Gas A Alarm H occurred	Boolean	Channel 1/GasA/AlarmHOccurred/1010400
Channel 1 Gas A Alarm L occurred	Boolean	Channel 1/GasA/AlarmLOccurred/1010500
Channel 1 Gas A Alarm LL occurred	Boolean	Channel 1/GasA/AlarmLLOccurred/1010600
Channel 1 Gas A Invalid flag	Boolean	Channel 1/GasA/InvalidFlag/1010700
Channel 1 Gas A Name	String	Channel 1/GasA/Name/1010800
Channel 1 Gas B Concentration	Float	Channel 1/GasB/Concentration/1020100
Channel 1 Gas B Unit	String	Channel 1/GasB/Unit/1020200
Channel 1 Gas B Alarm HH occurred	Boolean	Channel 1/GasB/AlarmHHOccurred/1020300
Channel 1 Gas B Alarm H occurred	Boolean	Channel 1/GasB/AlarmHOccurred/1020400
Channel 1 Gas B Alarm L occurred	Boolean	Channel 1/GasB/AlarmLOccurred/1020500
Channel 1 Gas B Alarm LL occurred	Boolean	Channel 1/GasB/AlarmLLOccurred/1020600
Channel 1 Gas B Invalid flag	Boolean	Channel 1/GasB/InvalidFlag/1020700
Channel 1 Gas B Name	String	Channel 1/GasB/Name/1020800
Channel 1 Gas C Concentration	Float	Channel 1/GasC/Concentration/1030100
Channel 1 Gas C Unit	String	Channel 1/GasC/Unit/1030200
Channel 1 Gas C Alarm HH occurred	Boolean	Channel 1/GasC/AlarmHHOccurred/1030300
Channel 1 Gas C Alarm H occurred	Boolean	Channel 1/GasC/AlarmHOccurred/1030400
Channel 1 Gas C Alarm L occurred	Boolean	Channel 1/GasC/AlarmLOccurred/1030500
Channel 1 Gas C Alarm LL occurred	Boolean	Channel 1/GasC/AlarmLLOccurred/1030600
Channel 1 Gas C Invalid flag	Boolean	Channel 1/GasC/InvalidFlag/1030700
Channel 1 Gas C Name	String	Channel 1/GasC/Name/1030800
Channel 1 Gas D Concentration	Float	Channel 1/GasD/Concentration/1040100
Channel 1 Gas D Unit	String	Channel 1/GasD/Unit/1040200
Channel 1 Gas D Alarm HH occurred	Boolean	Channel 1/GasD/AlarmHHOccurred/1040300
Channel 1 Gas D Alarm H occurred	Boolean	Channel 1/GasD/AlarmHOccurred/1040400
Channel 1 Gas D Alarm L occurred	Boolean	Channel 1/GasD/AlarmLOccurred/1040500
Channel 1 Gas D Alarm LL occurred	Boolean	Channel 1/GasD/AlarmLLOccurred/1040600
Channel 1 Gas D Invalid flag	Boolean	Channel 1/GasD/InvalidFlag/1040700
Channel 1 Gas D Name	String	Channel 1/GasD/Name/1040800
Channel 1 Gas E Concentration	Float	Channel 1/GasE/Concentration/1050100
Channel 1 Gas E Unit	String	Channel 1/GasE/Unit/1050200
Channel 1 Gas E Alarm HH occurred	Boolean	Channel 1/GasE/AlarmHHOccurred/1050300
Channel 1 Gas E Alarm H occurred	Boolean	Channel 1/GasE/AlarmHOccurred/1050400

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Channel 4 Gas E Name	String	Channel 4/GasE/Name/4050800
Channel 4 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 4/SampleCellTemperatureOutOfRangeFlag/4150000
Channel 4 In Flow Fault flag	Boolean	Channel 4/InFlowFaultFlag/4200000
Channel 4 New NOx Sensor Required flag	Boolean	Channel 4/NewNOxSensorRequiredFlag/4250000
Channel 4 New O2 Sensor Required flag	Boolean	Channel 4/NewO2SensorRequiredFlag/4300000
Channel 4 IR Signal Lost flag	Boolean	Channel 4/IRSignalLostFlag/4350000
Channel 4 Out Flow Fault flag	Boolean	Channel 4/OutFlowFaultFlag/4400000
Channel 4 Ambient Temperature Out Of Range flag	Boolean	Channel 4/AmbientTemperatureOutOfRangeFlag/4450000
Channel 4 Low Flow Fault flag	Boolean	Channel 4/LowFlowFaultFlag/4500000
Channel 4 Leak Test Fault flag	Boolean	Channel 4/LeakTestFaultFlag/4550000
Channel 5 In Use Flag	Boolean	Channel 5/InUseFlag/5000000
Channel 5 Gas A Concentration	Float	Channel 5/GasA/Concentration/5010100
Channel 5 Gas A Unit	String	Channel 5/GasA/Unit/5010200
Channel 5 Gas A Alarm HH occurred	Boolean	Channel 5/GasA/AlarmHHOccurred/5010300
Channel 5 Gas A Alarm H occurred	Boolean	Channel 5/GasA/AlarmHOccurred/5010400
Channel 5 Gas A Alarm L occurred	Boolean	Channel 5/GasA/AlarmLOccurred/5010500
Channel 5 Gas A Alarm LL occurred	Boolean	Channel 5/GasA/AlarmLLOccurred/5010600
Channel 5 Gas A Invalid flag	Boolean	Channel 5/GasA/InvalidFlag/5010700
Channel 5 Gas A Name	String	Channel 5/GasA/Name/5010800
Channel 5 Gas B Concentration	Float	Channel 5/GasB/Concentration/5020100
Channel 5 Gas B Unit	String	Channel 5/GasB/Unit/5020200
Channel 5 Gas B Alarm HH occurred	Boolean	Channel 5/GasB/AlarmHHOccurred/5020300
Channel 5 Gas B Alarm H occurred	Boolean	Channel 5/GasB/AlarmHOccurred/5020400
Channel 5 Gas B Alarm L occurred	Boolean	Channel 5/GasB/AlarmLOccurred/5020500
Channel 5 Gas B Alarm LL occurred	Boolean	Channel 5/GasB/AlarmLLOccurred/5020600
Channel 5 Gas B Invalid flag	Boolean	Channel 5/GasB/InvalidFlag/5020700
Channel 5 Gas B Name	String	Channel 5/GasB/Name/5020800
Channel 5 Gas C Concentration	Float	Channel 5/GasC/Concentration/5030100
Channel 5 Gas C Unit	String	Channel 5/GasC/Unit/5030200
Channel 5 Gas C Alarm HH occurred	Boolean	Channel 5/GasC/AlarmHHOccurred/5030300
Channel 5 Gas C Alarm H occurred	Boolean	Channel 5/GasC/AlarmHOccurred/5030400
Channel 5 Gas C Alarm L occurred	Boolean	Channel 5/GasC/AlarmLOccurred/5030500
Channel 5 Gas C Alarm LL occurred	Boolean	Channel 5/GasC/AlarmLLOccurred/5030600
Channel 5 Gas C Invalid flag	Boolean	Channel 5/GasC/InvalidFlag/5030700
Channel 5 Gas C Name	String	Channel 5/GasC/Name/5030800
Channel 5 Gas D Concentration	Float	Channel 5/GasD/Concentration/5040100
Channel 5 Gas D Unit	String	Channel 5/GasD/Unit/5040200
Channel 5 Gas D Alarm HH occurred	Boolean	Channel 5/GasD/AlarmHHOccurred/5040300
Channel 5 Gas D Alarm H occurred	Boolean	Channel 5/GasD/AlarmHOccurred/5040400
Channel 5 Gas D Alarm L occurred	Boolean	Channel 5/GasD/AlarmLOccurred/5040500
Channel 5 Gas D Alarm LL occurred	Boolean	Channel 5/GasD/AlarmLLOccurred/5040600
Channel 5 Gas D Invalid flag	Boolean	Channel 5/GasD/InvalidFlag/5040700
Channel 5 Gas D Name	String	Channel 5/GasD/Name/5040800
Channel 5 Gas E Concentration	Float	Channel 5/GasE/Concentration/5050100
Channel 5 Gas E Unit	String	Channel 5/GasE/Unit/5050200
Channel 5 Gas E Alarm HH occurred	Boolean	Channel 5/GasE/AlarmHHOccurred/5050300
Channel 5 Gas E Alarm H occurred	Boolean	Channel 5/GasE/AlarmHOccurred/5050400
Channel 5 Gas E Alarm L occurred	Boolean	Channel 5/GasE/AlarmLOccurred/5050500
Channel 5 Gas E Alarm LL occurred	Boolean	Channel 5/GasE/AlarmLLOccurred/5050600
Channel 5 Gas E Invalid flag	Boolean	Channel 5/GasE/InvalidFlag/5050700
Channel 5 Gas E Name	String	Channel 5/GasE/Name/5050800

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Channel 5 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 5/SampleCellTemperatureOutOfRangeFlag/5150000
Channel 5 In Flow Fault flag	Boolean	Channel 5/InFlowFaultFlag/5200000
Channel 5 New NOx Sensor Required flag	Boolean	Channel 5/NewNOxSensorRequiredFlag/5250000
Channel 5 New O2 Sensor Required flag	Boolean	Channel 5/NewO2SensorRequiredFlag/5300000
Channel 5 IR Signal Lost flag	Boolean	Channel 5/IRSignalLostFlag/5350000
Channel 5 Out Flow Fault flag	Boolean	Channel 5/OutFlowFaultFlag/5400000
Channel 5 Ambient Temperature Out Of Range flag	Boolean	Channel 5/AmbientTemperatureOutOfRangeFlag/5450000
Channel 5 Low Flow Fault flag	Boolean	Channel 5/LowFlowFaultFlag/5500000
Channel 5 Leak Test Fault flag	Boolean	Channel 5/LeakTestFaultFlag/5550000
Channel 6 In Use Flag	Boolean	Channel 6/InUseFlag/6000000
Channel 6 Gas A Concentration	Float	Channel 6/GasA/Concentration/6010100
Channel 6 Gas A Unit	String	Channel 6/GasA/Unit/6010200
Channel 6 Gas A Alarm HH occurred	Boolean	Channel 6/GasA/AlarmHHOccurred/6010300
Channel 6 Gas A Alarm H occurred	Boolean	Channel 6/GasA/AlarmHOccurred/6010400
Channel 6 Gas A Alarm L occurred	Boolean	Channel 6/GasA/AlarmLOccurred/6010500
Channel 6 Gas A Alarm LL occurred	Boolean	Channel 6/GasA/AlarmLLOccurred/6010600
Channel 6 Gas A Invalid flag	Boolean	Channel 6/GasA/InvalidFlag/6010700
Channel 6 Gas A Name	String	Channel 6/GasA/Name/6010800
Channel 6 Gas B Concentration	Float	Channel 6/GasB/Concentration/6020100
Channel 6 Gas B Unit	String	Channel 6/GasB/Unit/6020200
Channel 6 Gas B Alarm HH occurred	Boolean	Channel 6/GasB/AlarmHHOccurred/6020300
Channel 6 Gas B Alarm H occurred	Boolean	Channel 6/GasB/AlarmHOccurred/6020400
Channel 6 Gas B Alarm L occurred	Boolean	Channel 6/GasB/AlarmLOccurred/6020500
Channel 6 Gas B Alarm LL occurred	Boolean	Channel 6/GasB/AlarmLLOccurred/6020600
Channel 6 Gas B Invalid flag	Boolean	Channel 6/GasB/InvalidFlag/6020700
Channel 6 Gas B Name	String	Channel 6/GasB/Name/6020800
Channel 6 Gas C Concentration	Float	Channel 6/GasC/Concentration/6030100
Channel 6 Gas C Unit	String	Channel 6/GasC/Unit/6030200
Channel 6 Gas C Alarm HH occurred	Boolean	Channel 6/GasC/AlarmHHOccurred/6030300
Channel 6 Gas C Alarm H occurred	Boolean	Channel 6/GasC/AlarmHOccurred/6030400
Channel 6 Gas C Alarm L occurred	Boolean	Channel 6/GasC/AlarmLOccurred/6030500
Channel 6 Gas C Alarm LL occurred	Boolean	Channel 6/GasC/AlarmLLOccurred/6030600
Channel 6 Gas C Invalid flag	Boolean	Channel 6/GasC/InvalidFlag/6030700
Channel 6 Gas C Name	String	Channel 6/GasC/Name/6030800
Channel 6 Gas D Concentration	Float	Channel 6/GasD/Concentration/6040100
Channel 6 Gas D Unit	String	Channel 6/GasD/Unit/6040200
Channel 6 Gas D Alarm HH occurred	Boolean	Channel 6/GasD/AlarmHHOccurred/6040300
Channel 6 Gas D Alarm H occurred	Boolean	Channel 6/GasD/AlarmHOccurred/6040400
Channel 6 Gas D Alarm L occurred	Boolean	Channel 6/GasD/AlarmLOccurred/6040500
Channel 6 Gas D Alarm LL occurred	Boolean	Channel 6/GasD/AlarmLLOccurred/6040600
Channel 6 Gas D Invalid flag	Boolean	Channel 6/GasD/InvalidFlag/6040700
Channel 6 Gas D Name	String	Channel 6/GasD/Name/6040800
Channel 6 Gas E Concentration	Float	Channel 6/GasE/Concentration/6050100
Channel 6 Gas E Unit	String	Channel 6/GasE/Unit/6050200
Channel 6 Gas E Alarm HH occurred	Boolean	Channel 6/GasE/AlarmHHOccurred/6050300
Channel 6 Gas E Alarm H occurred	Boolean	Channel 6/GasE/AlarmHOccurred/6050400
Channel 6 Gas E Alarm L occurred	Boolean	Channel 6/GasE/AlarmLOccurred/6050500
Channel 6 Gas E Alarm LL occurred	Boolean	Channel 6/GasE/AlarmLLOccurred/6050600
Channel 6 Gas E Invalid flag	Boolean	Channel 6/GasE/InvalidFlag/6050700
Channel 6 Gas E Name	String	Channel 6/GasE/Name/6050800
Channel 6 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 6/SampleCellTemperatureOutOfRangeFlag/6150000

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Range Flag		
Channel 6 In Flow Fault flag	Boolean	Channel 6/InFlowFaultFlag/6200000
Channel 6 New NOx Sensor Required flag	Boolean	Channel 6/NewNOxSensorRequiredFlag/6250000
Channel 6 New O2 Sensor Required flag	Boolean	Channel 6/NewO2SensorRequiredFlag/6300000
Channel 6 IR Signal Lost flag	Boolean	Channel 6/IRSignalLostFlag/6350000
Channel 6 Out Flow Fault flag	Boolean	Channel 6/OutFlowFaultFlag/6400000
Channel 6 Ambient Temperature Out Of Range flag	Boolean	Channel 6/AmbientTemperatureOutOfRangeFlag/6450000
Channel 6 Low Flow Fault flag	Boolean	Channel 6/LowFlowFaultFlag/6500000
Channel 6 Leak Test Fault flag	Boolean	Channel 6/LeakTestFaultFlag/6550000
Channel 7 In Use Flag	Boolean	Channel 7/InUseFlag/7000000
Channel 7 Gas A Concentration	Float	Channel 7/GasA/Concentration/7010100
Channel 7 Gas A Unit	String	Channel 7/GasA/Unit/7010200
Channel 7 Gas A Alarm HH occurred	Boolean	Channel 7/GasA/AlarmHHOccurred/7010300
Channel 7 Gas A Alarm H occurred	Boolean	Channel 7/GasA/AlarmHOccurred/7010400
Channel 7 Gas A Alarm L occurred	Boolean	Channel 7/GasA/AlarmLOccurred/7010500
Channel 7 Gas A Alarm LL occurred	Boolean	Channel 7/GasA/AlarmLLOccurred/7010600
Channel 7 Gas A Invalid flag	Boolean	Channel 7/GasA/InvalidFlag/7010700
Channel 7 Gas A Name	String	Channel 7/GasA/Name/7010800
Channel 7 Gas B Concentration	Float	Channel 7/GasB/Concentration/7020100
Channel 7 Gas B Unit	String	Channel 7/GasB/Unit/7020200
Channel 7 Gas B Alarm HH occurred	Boolean	Channel 7/GasB/AlarmHHOccurred/7020300
Channel 7 Gas B Alarm H occurred	Boolean	Channel 7/GasB/AlarmHOccurred/7020400
Channel 7 Gas B Alarm L occurred	Boolean	Channel 7/GasB/AlarmLOccurred/7020500
Channel 7 Gas B Alarm LL occurred	Boolean	Channel 7/GasB/AlarmLLOccurred/7020600
Channel 7 Gas B Invalid flag	Boolean	Channel 7/GasB/InvalidFlag/7020700
Channel 7 Gas B Name	String	Channel 7/GasB/Name/7020800
Channel 7 Gas C Concentration	Float	Channel 7/GasC/Concentration/7030100
Channel 7 Gas C Unit	String	Channel 7/GasC/Unit/7030200
Channel 7 Gas C Alarm HH occurred	Boolean	Channel 7/GasC/AlarmHHOccurred/7030300
Channel 7 Gas C Alarm H occurred	Boolean	Channel 7/GasC/AlarmHOccurred/7030400
Channel 7 Gas C Alarm L occurred	Boolean	Channel 7/GasC/AlarmLOccurred/7030500
Channel 7 Gas C Alarm LL occurred	Boolean	Channel 7/GasC/AlarmLLOccurred/7030600
Channel 7 Gas C Invalid flag	Boolean	Channel 7/GasC/InvalidFlag/7030700
Channel 7 Gas C Name	String	Channel 7/GasC/Name/7030800
Channel 7 Gas D Concentration	Float	Channel 7/GasD/Concentration/7040100
Channel 7 Gas D Unit	String	Channel 7/GasD/Unit/7040200
Channel 7 Gas D Alarm HH occurred	Boolean	Channel 7/GasD/AlarmHHOccurred/7040300
Channel 7 Gas D Alarm H occurred	Boolean	Channel 7/GasD/AlarmHOccurred/7040400
Channel 7 Gas D Alarm L occurred	Boolean	Channel 7/GasD/AlarmLOccurred/7040500
Channel 7 Gas D Alarm LL occurred	Boolean	Channel 7/GasD/AlarmLLOccurred/7040600
Channel 7 Gas D Invalid flag	Boolean	Channel 7/GasD/InvalidFlag/7040700
Channel 7 Gas D Name	String	Channel 7/GasD/Name/7040800
Channel 7 Gas E Concentration	Float	Channel 7/GasE/Concentration/7050100
Channel 7 Gas E Unit	String	Channel 7/GasE/Unit/7050200
Channel 7 Gas E Alarm HH occurred	Boolean	Channel 7/GasE/AlarmHHOccurred/7050300
Channel 7 Gas E Alarm H occurred	Boolean	Channel 7/GasE/AlarmHOccurred/7050400
Channel 7 Gas E Alarm L occurred	Boolean	Channel 7/GasE/AlarmLOccurred/7050500
Channel 7 Gas E Alarm LL occurred	Boolean	Channel 7/GasE/AlarmLLOccurred/7050600
Channel 7 Gas E Invalid flag	Boolean	Channel 7/GasE/InvalidFlag/7050700
Channel 7 Gas E Name	String	Channel 7/GasE/Name/7050800
Channel 7 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 7/SampleCellTemperatureOutOfRangeFlag/7150000

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Channel 7 In Flow Fault flag	Boolean	Channel 7/InFlowFaultFlag/7200000
Channel 7 New NOx Sensor Required flag	Boolean	Channel 7/NewNOxSensorRequiredFlag/7250000
Channel 7 New O2 Sensor Required flag	Boolean	Channel 7/NewO2SensorRequiredFlag/7300000
Channel 7 IR Signal Lost flag	Boolean	Channel 7/IRSignalLostFlag/7350000
Channel 7 Out Flow Fault flag	Boolean	Channel 7/OutFlowFaultFlag/7400000
Channel 7 Ambient Temperature Out Of Range flag	Boolean	Channel 7/AmbientTemperatureOutOfRangeFlag/7450000
Channel 7 Low Flow Fault flag	Boolean	Channel 7/LowFlowFaultFlag/7500000
Channel 7 Leak Test Fault flag	Boolean	Channel 7/LeakTestFaultFlag/7550000
Channel 8 In Use Flag	Boolean	Channel 8/InUseFlag/8000000
Channel 8 Gas A Concentration	Float	Channel 8/GasA/Concentration/8010100
Channel 8 Gas A Unit	String	Channel 8/GasA/Unit/8010200
Channel 8 Gas A Alarm HH occurred	Boolean	Channel 8/GasA/AlarmHHOccurred/8010300
Channel 8 Gas A Alarm H occurred	Boolean	Channel 8/GasA/AlarmHOccurred/8010400
Channel 8 Gas A Alarm L occurred	Boolean	Channel 8/GasA/AlarmLOccurred/8010500
Channel 8 Gas A Alarm LL occurred	Boolean	Channel 8/GasA/AlarmLLOccurred/8010600
Channel 8 Gas A Invalid flag	Boolean	Channel 8/GasA/InvalidFlag/8010700
Channel 8 Gas A Name	String	Channel 8/GasA/Name/8010800
Channel 8 Gas B Concentration	Float	Channel 8/GasB/Concentration/8020100
Channel 8 Gas B Unit	String	Channel 8/GasB/Unit/8020200
Channel 8 Gas B Alarm HH occurred	Boolean	Channel 8/GasB/AlarmHHOccurred/8020300
Channel 8 Gas B Alarm H occurred	Boolean	Channel 8/GasB/AlarmHOccurred/8020400
Channel 8 Gas B Alarm L occurred	Boolean	Channel 8/GasB/AlarmLOccurred/8020500
Channel 8 Gas B Alarm LL occurred	Boolean	Channel 8/GasB/AlarmLLOccurred/8020600
Channel 8 Gas B Invalid flag	Boolean	Channel 8/GasB/InvalidFlag/8020700
Channel 8 Gas B Name	String	Channel 8/GasB/Name/8020800
Channel 8 Gas C Concentration	Float	Channel 8/GasC/Concentration/8030100
Channel 8 Gas C Unit	String	Channel 8/GasC/Unit/8030200
Channel 8 Gas C Alarm HH occurred	Boolean	Channel 8/GasC/AlarmHHOccurred/8030300
Channel 8 Gas C Alarm H occurred	Boolean	Channel 8/GasC/AlarmHOccurred/8030400
Channel 8 Gas C Alarm L occurred	Boolean	Channel 8/GasC/AlarmLOccurred/8030500
Channel 8 Gas C Alarm LL occurred	Boolean	Channel 8/GasC/AlarmLLOccurred/8030600
Channel 8 Gas C Invalid flag	Boolean	Channel 8/GasC/InvalidFlag/8030700
Channel 8 Gas C Name	String	Channel 8/GasC/Name/8030800
Channel 8 Gas D Concentration	Float	Channel 8/GasD/Concentration/8040100
Channel 8 Gas D Unit	String	Channel 8/GasD/Unit/8040200
Channel 8 Gas D Alarm HH occurred	Boolean	Channel 8/GasD/AlarmHHOccurred/8040300
Channel 8 Gas D Alarm H occurred	Boolean	Channel 8/GasD/AlarmHOccurred/8040400
Channel 8 Gas D Alarm L occurred	Boolean	Channel 8/GasD/AlarmLOccurred/8040500
Channel 8 Gas D Alarm LL occurred	Boolean	Channel 8/GasD/AlarmLLOccurred/8040600
Channel 8 Gas D Invalid flag	Boolean	Channel 8/GasD/InvalidFlag/8040700
Channel 8 Gas D Name	String	Channel 8/GasD/Name/8040800
Channel 8 Gas E Concentration	Float	Channel 8/GasE/Concentration/8050100
Channel 8 Gas E Unit	String	Channel 8/GasE/Unit/8050200
Channel 8 Gas E Alarm HH occurred	Boolean	Channel 8/GasE/AlarmHHOccurred/8050300
Channel 8 Gas E Alarm H occurred	Boolean	Channel 8/GasE/AlarmHOccurred/8050400
Channel 8 Gas E Alarm L occurred	Boolean	Channel 8/GasE/AlarmLOccurred/8050500
Channel 8 Gas E Alarm LL occurred	Boolean	Channel 8/GasE/AlarmLLOccurred/8050600
Channel 8 Gas E Invalid flag	Boolean	Channel 8/GasE/InvalidFlag/8050700
Channel 8 Gas E Name	String	Channel 8/GasE/Name/8050800
Channel 8 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 8/SampleCellTemperatureOutOfRangeFlag/8150000
Channel 8 In Flow Fault flag	Boolean	Channel 8/InFlowFaultFlag/8200000

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Channel 8 New NOx Sensor Required flag	Boolean	Channel 8/NewNOxSensorRequiredFlag/8250000
Channel 8 New O2 Sensor Required flag	Boolean	Channel 8/NewO2SensorRequiredFlag/8300000
Channel 8 IR Signal Lost flag	Boolean	Channel 8/IRSignalLostFlag/8350000
Channel 8 Out Flow Fault flag	Boolean	Channel 8/OutFlowFaultFlag/8400000
Channel 8 Ambient Temperature Out Of Range flag	Boolean	Channel 8/AmbientTemperatureOutOfRangeFlag/8450000
Channel 8 Low Flow Fault flag	Boolean	Channel 8/LowFlowFaultFlag/8500000
Channel 8 Leak Test Fault flag	Boolean	Channel 8/LeakTestFaultFlag/8550000
Channel 9 In Use Flag	Boolean	Channel 9/InUseFlag/9000000
Channel 9 Gas A Concentration	Float	Channel 9/GasA/Concentration/9010100
Channel 9 Gas A Unit	String	Channel 9/GasA/Unit/9010200
Channel 9 Gas A Alarm HH occurred	Boolean	Channel 9/GasA/AlarmHHOccurred/9010300
Channel 9 Gas A Alarm H occurred	Boolean	Channel 9/GasA/AlarmHOccurred/9010400
Channel 9 Gas A Alarm L occurred	Boolean	Channel 9/GasA/AlarmLOccurred/9010500
Channel 9 Gas A Alarm LL occurred	Boolean	Channel 9/GasA/AlarmLLOccurred/9010600
Channel 9 Gas A Invalid flag	Boolean	Channel 9/GasA/InvalidFlag/9010700
Channel 9 Gas A Name	String	Channel 9/GasA/Name/9010800
Channel 9 Gas B Concentration	Float	Channel 9/GasB/Concentration/9020100
Channel 9 Gas B Unit	String	Channel 9/GasB/Unit/9020200
Channel 9 Gas B Alarm HH occurred	Boolean	Channel 9/GasB/AlarmHHOccurred/9020300
Channel 9 Gas B Alarm H occurred	Boolean	Channel 9/GasB/AlarmHOccurred/9020400
Channel 9 Gas B Alarm L occurred	Boolean	Channel 9/GasB/AlarmLOccurred/9020500
Channel 9 Gas B Alarm LL occurred	Boolean	Channel 9/GasB/AlarmLLOccurred/9020600
Channel 9 Gas B Invalid flag	Boolean	Channel 9/GasB/InvalidFlag/9020700
Channel 9 Gas B Name	String	Channel 9/GasB/Name/9020800
Channel 9 Gas C Concentration	Float	Channel 9/GasC/Concentration/9030100
Channel 9 Gas C Unit	String	Channel 9/GasC/Unit/9030200
Channel 9 Gas C Alarm HH occurred	Boolean	Channel 9/GasC/AlarmHHOccurred/9030300
Channel 9 Gas C Alarm H occurred	Boolean	Channel 9/GasC/AlarmHOccurred/9030400
Channel 9 Gas C Alarm L occurred	Boolean	Channel 9/GasC/AlarmLOccurred/9030500
Channel 9 Gas C Alarm LL occurred	Boolean	Channel 9/GasC/AlarmLLOccurred/9030600
Channel 9 Gas C Invalid flag	Boolean	Channel 9/GasC/InvalidFlag/9030700
Channel 9 Gas C Name	String	Channel 9/GasC/Name/9030800
Channel 9 Gas D Concentration	Float	Channel 9/GasD/Concentration/9040100
Channel 9 Gas D Unit	String	Channel 9/GasD/Unit/9040200
Channel 9 Gas D Alarm HH occurred	Boolean	Channel 9/GasD/AlarmHHOccurred/9040300
Channel 9 Gas D Alarm H occurred	Boolean	Channel 9/GasD/AlarmHOccurred/9040400
Channel 9 Gas D Alarm L occurred	Boolean	Channel 9/GasD/AlarmLOccurred/9040500
Channel 9 Gas D Alarm LL occurred	Boolean	Channel 9/GasD/AlarmLLOccurred/9040600
Channel 9 Gas D Invalid flag	Boolean	Channel 9/GasD/InvalidFlag/9040700
Channel 9 Gas D Name	String	Channel 9/GasD/Name/9040800
Channel 9 Gas E Concentration	Float	Channel 9/GasE/Concentration/9050100
Channel 9 Gas E Unit	String	Channel 9/GasE/Unit/9050200
Channel 9 Gas E Alarm HH occurred	Boolean	Channel 9/GasE/AlarmHHOccurred/9050300
Channel 9 Gas E Alarm H occurred	Boolean	Channel 9/GasE/AlarmHOccurred/9050400
Channel 9 Gas E Alarm L occurred	Boolean	Channel 9/GasE/AlarmLOccurred/9050500
Channel 9 Gas E Alarm LL occurred	Boolean	Channel 9/GasE/AlarmLLOccurred/9050600
Channel 9 Gas E Invalid flag	Boolean	Channel 9/GasE/InvalidFlag/9050700
Channel 9 Gas E Name	String	Channel 9/GasE/Name/9050800
Channel 9 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 9/SampleCellTemperatureOutOfRangeFlag/9150000
Channel 9 In Flow Fault flag	Boolean	Channel 9/InFlowFaultFlag/9200000
Channel 9 New NOx Sensor Required flag	Boolean	Channel 9/NewNOxSensorRequiredFlag/9250000

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Channel 9 New O2 Sensor Required flag	Boolean	Channel 9/NewO2SensorRequiredFlag/9300000
Channel 9 IR Signal Lost flag	Boolean	Channel 9/IRSignalLostFlag/9350000
Channel 9 Out Flow Fault flag	Boolean	Channel 9/OutFlowFaultFlag/9400000
Channel 9 Ambient Temperature Out Of Range flag	Boolean	Channel 9/AmbientTemperatureOutOfRangeFlag/9450000
Channel 9 Low Flow Fault flag	Boolean	Channel 9/LowFlowFaultFlag/9500000
Channel 9 Leak Test Fault flag	Boolean	Channel 9/LeakTestFaultFlag/9550000
Channel 10 In Use Flag	Boolean	Channel 10/InUseFlag/10000000
Channel 10 Gas A Concentration	Float	Channel 10/GasA/Concentration/10010100
Channel 10 Gas A Unit	String	Channel 10/GasA/Unit/10010200
Channel 10 Gas A Alarm HH occurred	Boolean	Channel 10/GasA/AlarmHHOccurred/10010300
Channel 10 Gas A Alarm H occurred	Boolean	Channel 10/GasA/AlarmHOccurred/10010400
Channel 10 Gas A Alarm L occurred	Boolean	Channel 10/GasA/AlarmLOccurred/10010500
Channel 10 Gas A Alarm LL occurred	Boolean	Channel 10/GasA/AlarmLLOccurred/10010600
Channel 10 Gas A Invalid flag	Boolean	Channel 10/GasA/InvalidFlag/10010700
Channel 10 Gas A Name	String	Channel 10/GasA/Name/10010800
Channel 10 Gas B Concentration	Float	Channel 10/GasB/Concentration/10020100
Channel 10 Gas B Unit	String	Channel 10/GasB/Unit/10020200
Channel 10 Gas B Alarm HH occurred	Boolean	Channel 10/GasB/AlarmHHOccurred/10020300
Channel 10 Gas B Alarm H occurred	Boolean	Channel 10/GasB/AlarmHOccurred/10020400
Channel 10 Gas B Alarm L occurred	Boolean	Channel 10/GasB/AlarmLOccurred/10020500
Channel 10 Gas B Alarm LL occurred	Boolean	Channel 10/GasB/AlarmLLOccurred/10020600
Channel 10 Gas B Invalid flag	Boolean	Channel 10/GasB/InvalidFlag/10020700
Channel 10 Gas B Name	String	Channel 10/GasB/Name/10020800
Channel 10 Gas C Concentration	Float	Channel 10/GasC/Concentration/10030100
Channel 10 Gas C Unit	String	Channel 10/GasC/Unit/10030200
Channel 10 Gas C Alarm HH occurred	Boolean	Channel 10/GasC/AlarmHHOccurred/10030300
Channel 10 Gas C Alarm H occurred	Boolean	Channel 10/GasC/AlarmHOccurred/10030400
Channel 10 Gas C Alarm L occurred	Boolean	Channel 10/GasC/AlarmLOccurred/10030500
Channel 10 Gas C Alarm LL occurred	Boolean	Channel 10/GasC/AlarmLLOccurred/10030600
Channel 10 Gas C Invalid flag	Boolean	Channel 10/GasC/InvalidFlag/10030700
Channel 10 Gas C Name	String	Channel 10/GasC/Name/10030800
Channel 10 Gas D Concentration	Float	Channel 10/GasD/Concentration/10040100
Channel 10 Gas D Unit	String	Channel 10/GasD/Unit/10040200
Channel 10 Gas D Alarm HH occurred	Boolean	Channel 10/GasD/AlarmHHOccurred/10040300
Channel 10 Gas D Alarm H occurred	Boolean	Channel 10/GasD/AlarmHOccurred/10040400
Channel 10 Gas D Alarm L occurred	Boolean	Channel 10/GasD/AlarmLOccurred/10040500
Channel 10 Gas D Alarm LL occurred	Boolean	Channel 10/GasD/AlarmLLOccurred/10040600
Channel 10 Gas D Invalid flag	Boolean	Channel 10/GasD/InvalidFlag/10040700
Channel 10 Gas D Name	String	Channel 10/GasD/Name/10040800
Channel 10 Gas E Concentration	Float	Channel 10/GasE/Concentration/10050100
Channel 10 Gas E Unit	String	Channel 10/GasE/Unit/10050200
Channel 10 Gas E Alarm HH occurred	Boolean	Channel 10/GasE/AlarmHHOccurred/10050300
Channel 10 Gas E Alarm H occurred	Boolean	Channel 10/GasE/AlarmHOccurred/10050400
Channel 10 Gas E Alarm L occurred	Boolean	Channel 10/GasE/AlarmLOccurred/10050500
Channel 10 Gas E Alarm LL occurred	Boolean	Channel 10/GasE/AlarmLLOccurred/10050600
Channel 10 Gas E Invalid flag	Boolean	Channel 10/GasE/InvalidFlag/10050700
Channel 10 Gas E Name	String	Channel 10/GasE/Name/10050800
Channel 10 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 10/SampleCellTemperatureOutOfRangeFlag/10150000
Channel 10 In Flow Fault flag	Boolean	Channel 10/InFlowFaultFlag/10200000
Channel 10 New NOx Sensor Required flag	Boolean	Channel 10/NewNOxSensorRequiredFlag/10250000
Channel 10 New O2 Sensor Required flag	Boolean	Channel 10/NewO2SensorRequiredFlag/10300000

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Channel 10 IR Signal Lost flag	Boolean	Channel 10/IRSignalLostFlag/10350000
Channel 10 Out Flow Fault flag	Boolean	Channel 10/OutFlowFaultFlag/10400000
Channel 10 Ambient Temperature Out Of Range flag	Boolean	Channel 10/AmbientTemperatureOutOfRangeFlag/10450000
Channel 10 Low Flow Fault flag	Boolean	Channel 10/LowFlowFaultFlag/10500000
Channel 10 Leak Test Fault flag	Boolean	Channel 10/LeakTestFaultFlag/10550000
Channel 11 In Use Flag	Boolean	Channel 11/InUseFlag/11000000
Channel 11 Gas A Concentration	Float	Channel 11/GasA/Concentration/11010100
Channel 11 Gas A Unit	String	Channel 11/GasA/Unit/11010200
Channel 11 Gas A Alarm HH occurred	Boolean	Channel 11/GasA/AlarmHHOccurred/11010300
Channel 11 Gas A Alarm H occurred	Boolean	Channel 11/GasA/AlarmHOccurred/11010400
Channel 11 Gas A Alarm L occurred	Boolean	Channel 11/GasA/AlarmLOccurred/11010500
Channel 11 Gas A Alarm LL occurred	Boolean	Channel 11/GasA/AlarmLLOccurred/11010600
Channel 11 Gas A Invalid flag	Boolean	Channel 11/GasA/InvalidFlag/11010700
Channel 11 Gas A Name	String	Channel 11/GasA/Name/11010800
Channel 11 Gas B Concentration	Float	Channel 11/GasB/Concentration/11020100
Channel 11 Gas B Unit	String	Channel 11/GasB/Unit/11020200
Channel 11 Gas B Alarm HH occurred	Boolean	Channel 11/GasB/AlarmHHOccurred/11020300
Channel 11 Gas B Alarm H occurred	Boolean	Channel 11/GasB/AlarmHOccurred/11020400
Channel 11 Gas B Alarm L occurred	Boolean	Channel 11/GasB/AlarmLOccurred/11020500
Channel 11 Gas B Alarm LL occurred	Boolean	Channel 11/GasB/AlarmLLOccurred/11020600
Channel 11 Gas B Invalid flag	Boolean	Channel 11/GasB/InvalidFlag/11020700
Channel 11 Gas B Name	String	Channel 11/GasB/Name/11020800
Channel 11 Gas C Concentration	Float	Channel 11/GasC/Concentration/11030100
Channel 11 Gas C Unit	String	Channel 11/GasC/Unit/11030200
Channel 11 Gas C Alarm HH occurred	Boolean	Channel 11/GasC/AlarmHHOccurred/11030300
Channel 11 Gas C Alarm H occurred	Boolean	Channel 11/GasC/AlarmHOccurred/11030400
Channel 11 Gas C Alarm L occurred	Boolean	Channel 11/GasC/AlarmLOccurred/11030500
Channel 11 Gas C Alarm LL occurred	Boolean	Channel 11/GasC/AlarmLLOccurred/11030600
Channel 11 Gas C Invalid flag	Boolean	Channel 11/GasC/InvalidFlag/11030700
Channel 11 Gas C Name	String	Channel 11/GasC/Name/11030800
Channel 11 Gas D Concentration	Float	Channel 11/GasD/Concentration/11040100
Channel 11 Gas D Unit	String	Channel 11/GasD/Unit/11040200
Channel 11 Gas D Alarm HH occurred	Boolean	Channel 11/GasD/AlarmHHOccurred/11040300
Channel 11 Gas D Alarm H occurred	Boolean	Channel 11/GasD/AlarmHOccurred/11040400
Channel 11 Gas D Alarm L occurred	Boolean	Channel 11/GasD/AlarmLOccurred/11040500
Channel 11 Gas D Alarm LL occurred	Boolean	Channel 11/GasD/AlarmLLOccurred/11040600
Channel 11 Gas D Invalid flag	Boolean	Channel 11/GasD/InvalidFlag/11040700
Channel 11 Gas D Name	String	Channel 11/GasD/Name/11040800
Channel 11 Gas E Concentration	Float	Channel 11/GasE/Concentration/11050100
Channel 11 Gas E Unit	String	Channel 11/GasE/Unit/11050200
Channel 11 Gas E Alarm HH occurred	Boolean	Channel 11/GasE/AlarmHHOccurred/11050300
Channel 11 Gas E Alarm H occurred	Boolean	Channel 11/GasE/AlarmHOccurred/11050400
Channel 11 Gas E Alarm L occurred	Boolean	Channel 11/GasE/AlarmLOccurred/11050500
Channel 11 Gas E Alarm LL occurred	Boolean	Channel 11/GasE/AlarmLLOccurred/11050600
Channel 11 Gas E Invalid flag	Boolean	Channel 11/GasE/InvalidFlag/11050700
Channel 11 Gas E Name	String	Channel 11/GasE/Name/11050800
Channel 11 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 11/SampleCellTemperatureOutOfRangeFlag/11150000
Channel 11 In Flow Fault flag	Boolean	Channel 11/InFlowFaultFlag/11200000
Channel 11 New NOx Sensor Required flag	Boolean	Channel 11/NewNOxSensorRequiredFlag/11250000
Channel 11 New O2 Sensor Required flag	Boolean	Channel 11/NewO2SensorRequiredFlag/11300000
Channel 11 IR Signal Lost flag	Boolean	Channel 11/IRSignalLostFlag/11350000

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Channel 11 Out Flow Fault flag	Boolean	Channel 11/OutFlowFaultFlag/11400000
Channel 11 Ambient Temperature Out Of Range flag	Boolean	Channel 11/AmbientTemperatureOutOfRangeFlag/11450000
Channel 11 Low Flow Fault flag	Boolean	Channel 11/LowFlowFaultFlag/11500000
Channel 11 Leak Test Fault flag	Boolean	Channel 11/LeakTestFaultFlag/11550000
Channel 12 In Use Flag	Boolean	Channel 12/InUseFlag/12000000
Channel 12 Gas A Concentration	Float	Channel 12/GasA/Concentration/12010100
Channel 12 Gas A Unit	String	Channel 12/GasA/Unit/12010200
Channel 12 Gas A Alarm HH occurred	Boolean	Channel 12/GasA/AlarmHHOccurred/12010300
Channel 12 Gas A Alarm H occurred	Boolean	Channel 12/GasA/AlarmHOccurred/12010400
Channel 12 Gas A Alarm L occurred	Boolean	Channel 12/GasA/AlarmLOccurred/12010500
Channel 12 Gas A Alarm LL occurred	Boolean	Channel 12/GasA/AlarmLOccurred/12010600
Channel 12 Gas A Invalid flag	Boolean	Channel 12/GasA/InvalidFlag/12010700
Channel 12 Gas A Name	String	Channel 12/GasA/Name/12010800
Channel 12 Gas B Concentration	Float	Channel 12/GasB/Concentration/12020100
Channel 12 Gas B Unit	String	Channel 12/GasB/Unit/12020200
Channel 12 Gas B Alarm HH occurred	Boolean	Channel 12/GasB/AlarmHHOccurred/12020300
Channel 12 Gas B Alarm H occurred	Boolean	Channel 12/GasB/AlarmHOccurred/12020400
Channel 12 Gas B Alarm L occurred	Boolean	Channel 12/GasB/AlarmLOccurred/12020500
Channel 12 Gas B Alarm LL occurred	Boolean	Channel 12/GasB/AlarmLOccurred/12020600
Channel 12 Gas B Invalid flag	Boolean	Channel 12/GasB/InvalidFlag/12020700
Channel 12 Gas B Name	String	Channel 12/GasB/Name/12020800
Channel 12 Gas C Concentration	Float	Channel 12/GasC/Concentration/12030100
Channel 12 Gas C Unit	String	Channel 12/GasC/Unit/12030200
Channel 12 Gas C Alarm HH occurred	Boolean	Channel 12/GasC/AlarmHHOccurred/12030300
Channel 12 Gas C Alarm H occurred	Boolean	Channel 12/GasC/AlarmHOccurred/12030400
Channel 12 Gas C Alarm L occurred	Boolean	Channel 12/GasC/AlarmLOccurred/12030500
Channel 12 Gas C Alarm LL occurred	Boolean	Channel 12/GasC/AlarmLOccurred/12030600
Channel 12 Gas C Invalid flag	Boolean	Channel 12/GasC/InvalidFlag/12030700
Channel 12 Gas C Name	String	Channel 12/GasC/Name/12030800
Channel 12 Gas D Concentration	Float	Channel 12/GasD/Concentration/12040100
Channel 12 Gas D Unit	String	Channel 12/GasD/Unit/12040200
Channel 12 Gas D Alarm HH occurred	Boolean	Channel 12/GasD/AlarmHHOccurred/12040300
Channel 12 Gas D Alarm H occurred	Boolean	Channel 12/GasD/AlarmHOccurred/12040400
Channel 12 Gas D Alarm L occurred	Boolean	Channel 12/GasD/AlarmLOccurred/12040500
Channel 12 Gas D Alarm LL occurred	Boolean	Channel 12/GasD/AlarmLOccurred/12040600
Channel 12 Gas D Invalid flag	Boolean	Channel 12/GasD/InvalidFlag/12040700
Channel 12 Gas D Name	String	Channel 12/GasD/Name/12040800
Channel 12 Gas E Concentration	Float	Channel 12/GasE/Concentration/12050100
Channel 12 Gas E Unit	String	Channel 12/GasE/Unit/12050200
Channel 12 Gas E Alarm HH occurred	Boolean	Channel 12/GasE/AlarmHHOccurred/12050300
Channel 12 Gas E Alarm H occurred	Boolean	Channel 12/GasE/AlarmHOccurred/12050400
Channel 12 Gas E Alarm L occurred	Boolean	Channel 12/GasE/AlarmLOccurred/12050500
Channel 12 Gas E Alarm LL occurred	Boolean	Channel 12/GasE/AlarmLOccurred/12050600
Channel 12 Gas E Invalid flag	Boolean	Channel 12/GasE/InvalidFlag/12050700
Channel 12 Gas E Name	String	Channel 12/GasE/Name/12050800
Channel 12 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 12/SampleCellTemperatureOutOfRangeFlag/12150000
Channel 12 In Flow Fault flag	Boolean	Channel 12/InFlowFaultFlag/12200000
Channel 12 New NOx Sensor Required flag	Boolean	Channel 12/NewNOxSensorRequiredFlag/12250000
Channel 12 New O2 Sensor Required flag	Boolean	Channel 12/NewO2SensorRequiredFlag/12300000
Channel 12 IR Signal Lost flag	Boolean	Channel 12/IRSignalLostFlag/12350000
Channel 12 Out Flow Fault flag	Boolean	Channel 12/OutFlowFaultFlag/12400000

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Channel 21 Gas A Alarm H occurred	Boolean	Channel 21/GasA/AlarmHOccurred/24010400
Channel 21 Gas A Alarm L occurred	Boolean	Channel 21/GasA/AlarmLOccurred/24010500
Channel 21 Gas A Alarm LL occurred	Boolean	Channel 21/GasA/AlarmLOccurred/24010600
Channel 21 Gas A Invalid flag	Boolean	Channel 21/GasA/InvalidFlag/24010700
Channel 21 Gas A Name	String	Channel 21/GasA/Name/24010800
Channel 21 Gas B Concentration	Float	Channel 21/GasB/Concentration/24020100
Channel 21 Gas B Unit	String	Channel 21/GasB/Unit/24020200
Channel 21 Gas B Alarm HH occurred	Boolean	Channel 21/GasB/AlarmHHOccurred/24020300
Channel 21 Gas B Alarm H occurred	Boolean	Channel 21/GasB/AlarmHOccurred/24020400
Channel 21 Gas B Alarm L occurred	Boolean	Channel 21/GasB/AlarmLOccurred/24020500
Channel 21 Gas B Alarm LL occurred	Boolean	Channel 21/GasB/AlarmLOccurred/24020600
Channel 21 Gas B Invalid flag	Boolean	Channel 21/GasB/InvalidFlag/24020700
Channel 21 Gas B Name	String	Channel 21/GasB/Name/24020800
Channel 21 Gas C Concentration	Float	Channel 21/GasC/Concentration/24030100
Channel 21 Gas C Unit	String	Channel 21/GasC/Unit/24030200
Channel 21 Gas C Alarm HH occurred	Boolean	Channel 21/GasC/AlarmHHOccurred/24030300
Channel 21 Gas C Alarm H occurred	Boolean	Channel 21/GasC/AlarmHOccurred/24030400
Channel 21 Gas C Alarm L occurred	Boolean	Channel 21/GasC/AlarmLOccurred/24030500
Channel 21 Gas C Alarm LL occurred	Boolean	Channel 21/GasC/AlarmLOccurred/24030600
Channel 21 Gas C Invalid flag	Boolean	Channel 21/GasC/InvalidFlag/24030700
Channel 21 Gas C Name	String	Channel 21/GasC/Name/24030800
Channel 21 Gas D Concentration	Float	Channel 21/GasD/Concentration/24040100
Channel 21 Gas D Unit	String	Channel 21/GasD/Unit/24040200
Channel 21 Gas D Alarm HH occurred	Boolean	Channel 21/GasD/AlarmHHOccurred/24040300
Channel 21 Gas D Alarm H occurred	Boolean	Channel 21/GasD/AlarmHOccurred/24040400
Channel 21 Gas D Alarm L occurred	Boolean	Channel 21/GasD/AlarmLOccurred/24040500
Channel 21 Gas D Alarm LL occurred	Boolean	Channel 21/GasD/AlarmLOccurred/24040600
Channel 21 Gas D Invalid flag	Boolean	Channel 21/GasD/InvalidFlag/24040700
Channel 21 Gas D Name	String	Channel 21/GasD/Name/24040800
Channel 21 Gas E Concentration	Float	Channel 21/GasE/Concentration/24050100
Channel 21 Gas E Unit	String	Channel 21/GasE/Unit/24050200
Channel 21 Gas E Alarm HH occurred	Boolean	Channel 21/GasE/AlarmHHOccurred/24050300
Channel 21 Gas E Alarm H occurred	Boolean	Channel 21/GasE/AlarmHOccurred/24050400
Channel 21 Gas E Alarm L occurred	Boolean	Channel 21/GasE/AlarmLOccurred/24050500
Channel 21 Gas E Alarm LL occurred	Boolean	Channel 21/GasE/AlarmLOccurred/24050600
Channel 21 Gas E Invalid flag	Boolean	Channel 21/GasE/InvalidFlag/24050700
Channel 21 Gas E Name	String	Channel 21/GasE/Name/24050800
Channel 21 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 21/SampleCellTemperatureOutOfRangeFlag/24150000
Channel 21 In Flow Fault flag	Boolean	Channel 21/InFlowFaultFlag/24200000
Channel 21 New NOx Sensor Required flag	Boolean	Channel 21/NewNOxSensorRequiredFlag/24250000
Channel 21 New O2 Sensor Required flag	Boolean	Channel 21/NewO2SensorRequiredFlag/24300000
Channel 21 IR Signal Lost flag	Boolean	Channel 21/IRSignalLostFlag/24350000
Channel 21 Out Flow Fault flag	Boolean	Channel 21/OutFlowFaultFlag/24400000
Channel 21 Ambient Temperature Out Of Range flag	Boolean	Channel 21/AmbientTemperatureOutOfRangeFlag/24450000
Channel 21 Low Flow Fault flag	Boolean	Channel 21/LowFlowFaultFlag/24500000
Channel 21 Leak Test Fault flag	Boolean	Channel 21/LeakTestFaultFlag/24550000
Channel 22 In Use Flag	Boolean	Channel 22/InUseFlag/24000000
Channel 22 Gas A Concentration	Float	Channel 22/GasA/Concentration/24010100
Channel 22 Gas A Unit	String	Channel 22/GasA/Unit/24010200
Channel 22 Gas A Alarm HH occurred	Boolean	Channel 22/GasA/AlarmHHOccurred/24010300
Channel 22 Gas A Alarm H occurred	Boolean	Channel 22/GasA/AlarmHOccurred/24010400

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Channel 22 Gas A Alarm L occurred	Boolean	Channel 22/GasA/AlarmLOccurred/24010500
Channel 22 Gas A Alarm LL occurred	Boolean	Channel 22/GasA/AlarmLLOccurred/24010600
Channel 22 Gas A Invalid flag	Boolean	Channel 22/GasA/InvalidFlag/24010700
Channel 22 Gas A Name	String	Channel 22/GasA/Name/24010800
Channel 22 Gas B Concentration	Float	Channel 22/GasB/Concentration/24020100
Channel 22 Gas B Unit	String	Channel 22/GasB/Unit/24020200
Channel 22 Gas B Alarm HH occurred	Boolean	Channel 22/GasB/AlarmHHOccurred/24020300
Channel 22 Gas B Alarm H occurred	Boolean	Channel 22/GasB/AlarmHOccurred/24020400
Channel 22 Gas B Alarm L occurred	Boolean	Channel 22/GasB/AlarmLOccurred/24020500
Channel 22 Gas B Alarm LL occurred	Boolean	Channel 22/GasB/AlarmLLOccurred/24020600
Channel 22 Gas B Invalid flag	Boolean	Channel 22/GasB/InvalidFlag/24020700
Channel 22 Gas B Name	String	Channel 22/GasB/Name/24020800
Channel 22 Gas C Concentration	Float	Channel 22/GasC/Concentration/24030100
Channel 22 Gas C Unit	String	Channel 22/GasC/Unit/24030200
Channel 22 Gas C Alarm HH occurred	Boolean	Channel 22/GasC/AlarmHHOccurred/24030300
Channel 22 Gas C Alarm H occurred	Boolean	Channel 22/GasC/AlarmHOccurred/24030400
Channel 22 Gas C Alarm L occurred	Boolean	Channel 22/GasC/AlarmLOccurred/24030500
Channel 22 Gas C Alarm LL occurred	Boolean	Channel 22/GasC/AlarmLLOccurred/24030600
Channel 22 Gas C Invalid flag	Boolean	Channel 22/GasC/InvalidFlag/24030700
Channel 22 Gas C Name	String	Channel 22/GasC/Name/24030800
Channel 22 Gas D Concentration	Float	Channel 22/GasD/Concentration/24040100
Channel 22 Gas D Unit	String	Channel 22/GasD/Unit/24040200
Channel 22 Gas D Alarm HH occurred	Boolean	Channel 22/GasD/AlarmHHOccurred/24040300
Channel 22 Gas D Alarm H occurred	Boolean	Channel 22/GasD/AlarmHOccurred/24040400
Channel 22 Gas D Alarm L occurred	Boolean	Channel 22/GasD/AlarmLOccurred/24040500
Channel 22 Gas D Alarm LL occurred	Boolean	Channel 22/GasD/AlarmLLOccurred/24040600
Channel 22 Gas D Invalid flag	Boolean	Channel 22/GasD/InvalidFlag/24040700
Channel 22 Gas D Name	String	Channel 22/GasD/Name/24040800
Channel 22 Gas E Concentration	Float	Channel 22/GasE/Concentration/24050100
Channel 22 Gas E Unit	String	Channel 22/GasE/Unit/24050200
Channel 22 Gas E Alarm HH occurred	Boolean	Channel 22/GasE/AlarmHHOccurred/24050300
Channel 22 Gas E Alarm H occurred	Boolean	Channel 22/GasE/AlarmHOccurred/24050400
Channel 22 Gas E Alarm L occurred	Boolean	Channel 22/GasE/AlarmLOccurred/24050500
Channel 22 Gas E Alarm LL occurred	Boolean	Channel 22/GasE/AlarmLLOccurred/24050600
Channel 22 Gas E Invalid flag	Boolean	Channel 22/GasE/InvalidFlag/24050700
Channel 22 Gas E Name	String	Channel 22/GasE/Name/24050800
Channel 22 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 22/SampleCellTemperatureOutOfRangeFlag/24150000
Channel 22 In Flow Fault flag	Boolean	Channel 22/InFlowFaultFlag/24200000
Channel 22 New NOx Sensor Required flag	Boolean	Channel 22/NewNOxSensorRequiredFlag/24250000
Channel 22 New O2 Sensor Required flag	Boolean	Channel 22/NewO2SensorRequiredFlag/24300000
Channel 22 IR Signal Lost flag	Boolean	Channel 22/IRSignalLostFlag/24350000
Channel 22 Out Flow Fault flag	Boolean	Channel 22/OutFlowFaultFlag/24400000
Channel 22 Ambient Temperature Out Of Range flag	Boolean	Channel 22/AmbientTemperatureOutOfRangeFlag/24450000
Channel 22 Low Flow Fault flag	Boolean	Channel 22/LowFlowFaultFlag/24500000
Channel 22 Leak Test Fault flag	Boolean	Channel 22/LeakTestFaultFlag/24550000
Channel 23 In Use Flag	Boolean	Channel 23/InUseFlag/24000000
Channel 23 Gas A Concentration	Float	Channel 23/GasA/Concentration/24010100
Channel 23 Gas A Unit	String	Channel 23/GasA/Unit/24010200
Channel 23 Gas A Alarm HH occurred	Boolean	Channel 23/GasA/AlarmHHOccurred/24010300
Channel 23 Gas A Alarm H occurred	Boolean	Channel 23/GasA/AlarmHOccurred/24010400
Channel 23 Gas A Alarm L occurred	Boolean	Channel 23/GasA/AlarmLOccurred/24010500

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Channel 23 Gas A Alarm LL occurred	Boolean	Channel 23/GasA/AlarmLLOccurred/24010600
Channel 23 Gas A Invalid flag	Boolean	Channel 23/GasA/InvalidFlag/24010700
Channel 23 Gas A Name	String	Channel 23/GasA/Name/24010800
Channel 23 Gas B Concentration	Float	Channel 23/GasB/Concentration/24020100
Channel 23 Gas B Unit	String	Channel 23/GasB/Unit/24020200
Channel 23 Gas B Alarm HH occurred	Boolean	Channel 23/GasB/AlarmHHOccurred/24020300
Channel 23 Gas B Alarm H occurred	Boolean	Channel 23/GasB/AlarmHOccurred/24020400
Channel 23 Gas B Alarm L occurred	Boolean	Channel 23/GasB/AlarmLOccurred/24020500
Channel 23 Gas B Alarm LL occurred	Boolean	Channel 23/GasB/AlarmLLOccurred/24020600
Channel 23 Gas B Invalid flag	Boolean	Channel 23/GasB/InvalidFlag/24020700
Channel 23 Gas B Name	String	Channel 23/GasB/Name/24020800
Channel 23 Gas C Concentration	Float	Channel 23/GasC/Concentration/24030100
Channel 23 Gas C Unit	String	Channel 23/GasC/Unit/24030200
Channel 23 Gas C Alarm HH occurred	Boolean	Channel 23/GasC/AlarmHHOccurred/24030300
Channel 23 Gas C Alarm H occurred	Boolean	Channel 23/GasC/AlarmHOccurred/24030400
Channel 23 Gas C Alarm L occurred	Boolean	Channel 23/GasC/AlarmLOccurred/24030500
Channel 23 Gas C Alarm LL occurred	Boolean	Channel 23/GasC/AlarmLLOccurred/24030600
Channel 23 Gas C Invalid flag	Boolean	Channel 23/GasC/InvalidFlag/24030700
Channel 23 Gas C Name	String	Channel 23/GasC/Name/24030800
Channel 23 Gas D Concentration	Float	Channel 23/GasD/Concentration/24040100
Channel 23 Gas D Unit	String	Channel 23/GasD/Unit/24040200
Channel 23 Gas D Alarm HH occurred	Boolean	Channel 23/GasD/AlarmHHOccurred/24040300
Channel 23 Gas D Alarm H occurred	Boolean	Channel 23/GasD/AlarmHOccurred/24040400
Channel 23 Gas D Alarm L occurred	Boolean	Channel 23/GasD/AlarmLOccurred/24040500
Channel 23 Gas D Alarm LL occurred	Boolean	Channel 23/GasD/AlarmLLOccurred/24040600
Channel 23 Gas D Invalid flag	Boolean	Channel 23/GasD/InvalidFlag/24040700
Channel 23 Gas D Name	String	Channel 23/GasD/Name/24040800
Channel 23 Gas E Concentration	Float	Channel 23/GasE/Concentration/24050100
Channel 23 Gas E Unit	String	Channel 23/GasE/Unit/24050200
Channel 23 Gas E Alarm HH occurred	Boolean	Channel 23/GasE/AlarmHHOccurred/24050300
Channel 23 Gas E Alarm H occurred	Boolean	Channel 23/GasE/AlarmHOccurred/24050400
Channel 23 Gas E Alarm L occurred	Boolean	Channel 23/GasE/AlarmLOccurred/24050500
Channel 23 Gas E Alarm LL occurred	Boolean	Channel 23/GasE/AlarmLLOccurred/24050600
Channel 23 Gas E Invalid flag	Boolean	Channel 23/GasE/InvalidFlag/24050700
Channel 23 Gas E Name	String	Channel 23/GasE/Name/24050800
Channel 23 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 23/SampleCellTemperatureOutOfRangeFlag/24150000
Channel 23 In Flow Fault flag	Boolean	Channel 23/InFlowFaultFlag/24200000
Channel 23 New NOx Sensor Required flag	Boolean	Channel 23/NewNOxSensorRequiredFlag/24250000
Channel 23 New O2 Sensor Required flag	Boolean	Channel 23/NewO2SensorRequiredFlag/24300000
Channel 23 IR Signal Lost flag	Boolean	Channel 23/IRSignalLostFlag/24350000
Channel 23 Out Flow Fault flag	Boolean	Channel 23/OutFlowFaultFlag/24400000
Channel 23 Ambient Temperature Out Of Range flag	Boolean	Channel 23/AmbientTemperatureOutOfRangeFlag/24450000
Channel 23 Low Flow Fault flag	Boolean	Channel 23/LowFlowFaultFlag/24500000
Channel 23 Leak Test Fault flag	Boolean	Channel 23/LeakTestFaultFlag/24550000
Channel 24 In Use Flag	Boolean	Channel 24/InUseFlag/24000000
Channel 24 Gas A Concentration	Float	Channel 24/GasA/Concentration/24010100
Channel 24 Gas A Unit	String	Channel 24/GasA/Unit/24010200
Channel 24 Gas A Alarm HH occurred	Boolean	Channel 24/GasA/AlarmHHOccurred/24010300
Channel 24 Gas A Alarm H occurred	Boolean	Channel 24/GasA/AlarmHOccurred/24010400
Channel 24 Gas A Alarm L occurred	Boolean	Channel 24/GasA/AlarmLOccurred/24010500
Channel 24 Gas A Alarm LL occurred	Boolean	Channel 24/GasA/AlarmLLOccurred/24010600

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Channel 24 Gas A Invalid flag	Boolean	Channel 24/GasA/InvalidFlag/24010700
Channel 24 Gas A Name	String	Channel 24/GasA/Name/24010800
Channel 24 Gas B Concentration	Float	Channel 24/GasB/Concentration/24020100
Channel 24 Gas B Unit	String	Channel 24/GasB/Unit/24020200
Channel 24 Gas B Alarm HH occurred	Boolean	Channel 24/GasB/AlarmHHOccurred/24020300
Channel 24 Gas B Alarm H occurred	Boolean	Channel 24/GasB/AlarmHOccurred/24020400
Channel 24 Gas B Alarm L occurred	Boolean	Channel 24/GasB/AlarmLOccurred/24020500
Channel 24 Gas B Alarm LL occurred	Boolean	Channel 24/GasB/AlarmLLOccurred/24020600
Channel 24 Gas B Invalid flag	Boolean	Channel 24/GasB/InvalidFlag/24020700
Channel 24 Gas B Name	String	Channel 24/GasB/Name/24020800
Channel 24 Gas C Concentration	Float	Channel 24/GasC/Concentration/24030100
Channel 24 Gas C Unit	String	Channel 24/GasC/Unit/24030200
Channel 24 Gas C Alarm HH occurred	Boolean	Channel 24/GasC/AlarmHHOccurred/24030300
Channel 24 Gas C Alarm H occurred	Boolean	Channel 24/GasC/AlarmHOccurred/24030400
Channel 24 Gas C Alarm L occurred	Boolean	Channel 24/GasC/AlarmLOccurred/24030500
Channel 24 Gas C Alarm LL occurred	Boolean	Channel 24/GasC/AlarmLLOccurred/24030600
Channel 24 Gas C Invalid flag	Boolean	Channel 24/GasC/InvalidFlag/24030700
Channel 24 Gas C Name	String	Channel 24/GasC/Name/24030800
Channel 24 Gas D Concentration	Float	Channel 24/GasD/Concentration/24040100
Channel 24 Gas D Unit	String	Channel 24/GasD/Unit/24040200
Channel 24 Gas D Alarm HH occurred	Boolean	Channel 24/GasD/AlarmHHOccurred/24040300
Channel 24 Gas D Alarm H occurred	Boolean	Channel 24/GasD/AlarmHOccurred/24040400
Channel 24 Gas D Alarm L occurred	Boolean	Channel 24/GasD/AlarmLOccurred/24040500
Channel 24 Gas D Alarm LL occurred	Boolean	Channel 24/GasD/AlarmLLOccurred/24040600
Channel 24 Gas D Invalid flag	Boolean	Channel 24/GasD/InvalidFlag/24040700
Channel 24 Gas D Name	String	Channel 24/GasD/Name/24040800
Channel 24 Gas E Concentration	Float	Channel 24/GasE/Concentration/24050100
Channel 24 Gas E Unit	String	Channel 24/GasE/Unit/24050200
Channel 24 Gas E Alarm HH occurred	Boolean	Channel 24/GasE/AlarmHHOccurred/24050300
Channel 24 Gas E Alarm H occurred	Boolean	Channel 24/GasE/AlarmHOccurred/24050400
Channel 24 Gas E Alarm L occurred	Boolean	Channel 24/GasE/AlarmLOccurred/24050500
Channel 24 Gas E Alarm LL occurred	Boolean	Channel 24/GasE/AlarmLLOccurred/24050600
Channel 24 Gas E Invalid flag	Boolean	Channel 24/GasE/InvalidFlag/24050700
Channel 24 Gas E Name	String	Channel 24/GasE/Name/24050800
Channel 24 Sample Cell Temperature Out Of Range Flag	Boolean	Channel 24/SampleCellTemperatureOutOfRangeFlag/24150000
Channel 24 In Flow Fault flag	Boolean	Channel 24/InFlowFaultFlag/24200000
Channel 24 New NOx Sensor Required flag	Boolean	Channel 24/NewNOxSensorRequiredFlag/24250000
Channel 24 New O2 Sensor Required flag	Boolean	Channel 24/NewO2SensorRequiredFlag/24300000
Channel 24 IR Signal Lost flag	Boolean	Channel 24/IRSignalLostFlag/24350000
Channel 24 Out Flow Fault flag	Boolean	Channel 24/OutFlowFaultFlag/24400000
Channel 24 Ambient Temperature Out Of Range flag	Boolean	Channel 24/AmbientTemperatureOutOfRangeFlag/24450000
Channel 24 Low Flow Fault flag	Boolean	Channel 24/LowFlowFaultFlag/24500000
Channel 24 Leak Test Fault flag	Boolean	Channel 24/LeakTestFaultFlag/24550000

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