

# CombiSoft USER MANUAL

DATA LOGGING SYSTEM CONFIGURATION TOOL

This document is not contractual and the equipment specification may be modified at any time without prior notice.

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## Introduction

GDS Technologies CombiSoft is a data acquisition, monitoring and configuration tool for the Combi addressable gas detection system. This tool can only be used with Combi hardware and is not compatible with any other product. In order to use the CombiSoft the correct license key will need to be obtained from GDS Technologies LTD. The CombiSoft runs on a standard Windows PC. Data logging can only take place when the PC is connected and the software is actively running.

All end users **MUST** read the important notes section of the appendix before operating the software. This can be found on page 26.

# Product Specification

This specification is separated into four sections data acquisition, monitoring, configuration tools and system requirements.

## DATA ACQUISITION SPECIFICATIONS

Specification	Data
Minimum Sample rate	1/Sec
Maximum Sample rate	~1/18 Hours
Independent sample rate	Up to 80 sensors can have an independent sample.
Sampling Capabilities	Sample all 80 sensors within ~30 seconds*
Data Capacity	~15 bytes per sample / HDD Capacity
Max. Capacity	~ 320GB (4GB / sensor)
Data stored	Address, Date, Time, Value and Alarm Status
Data Extraction	As graph in real-time, Table, MS Excel, CSV (comma separated value format) and copied and pasted into almost any application.

\*Minimum sample time in large systems increases.

## MONITORING SPECIFICATIONS

Specification	Data
Display	Up to 80 sensors at once **
Display Data	Address, Text, Alarm and Fault status, Sensor Data, Sensor Values.
Alert	Alarms, Faults and Relays
Alert Types	Audio, Visual

\*\* Dependant on a high system specification. (RAM)

## CONFIGURATION SPECIFICATIONS

It is possible to configure the most common settings of sensors and the main panel. Also full remote calibration is possible.

# Installation

This installation guide does not cover the installation of the hardware. This only covers the software installation. For information on hardware installation refer to the Combi manual. Information regarding the wiring of the Combi system to the PC can be found under "Making your own RS232 connector" on page 14. Before you begin the installation ensure your copy of Windows is fully updated. Visit <http://update.microsoft.com/> to find out more.

## SYSTEM REQUIREMENTS

The minimum system requirements below should only be used in system where the software is likely to be operated periodically. If a system is to be used for 24 hour monitoring then the recommended system requirements should be strictly adhered to.

Requirement	Minimum	Recommended
Processor	1.0GHz Pentium 4 or equivalent.	2.2GHz Pentium or equivalent 1.6GHz Dual Core. This software is enhanced to make use of dual core processors. In a 24hour monitoring system dual core is highly recommended but not essential.
Ram	512MB	1024MB
Hard disk	40GB	80GB or above
CD ROM Drive	Only for installation	Only for installation
Graphics Card	Standard	Dedicate graphics card and RAM.
Monitor Resolution	1024 x 768	1280 x 1024
Operating System	Windows Server 2003, Windows Server 2008, Windows Vista, Windows XP SP2, Windows 7*	Windows XP SP2 Experience may differ on other Windows versions. SP2 = Service Pack 2 available for free download from the Microsoft website.
Operating System Architecture	X86 Only or 64 bit	X86 Only

\* can run on Windows 8 however no installation or product support available.

## PREPARING THE PC FOR USE AS 24 HOUR MONITORING

If this software is to be used as a 24 hour monitoring station the PC needs to be placed in a well ventilated area, all its ventilation holes must remain uncovered. The PC must also meet the recommended system requirements found in Table 1. It is also recommended that this kind of system is only used for this software. It is fine for the system to run other monitoring or essential software however for best performance any software that is unnecessary should be removed.

Where possible install the system on a clean installation of Microsoft Windows™. If you encounter any problems please ensure the target PC meets the required specification and refer to the troubleshoot guide before contacting GDS Technologies directly.

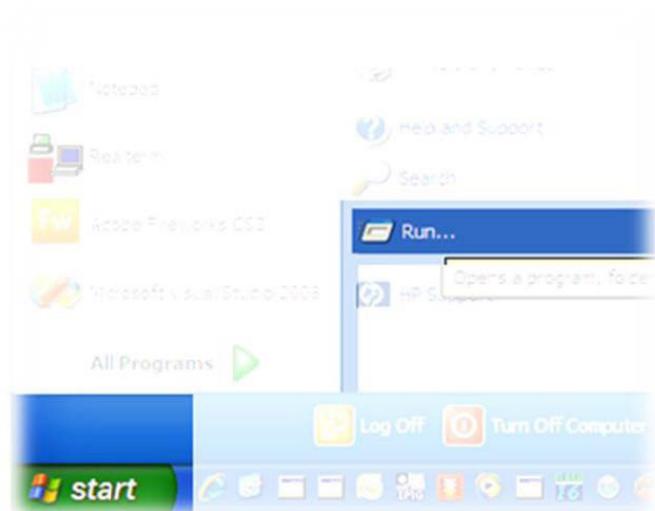


FIGURE 1 - RUN ON THE WINDOWS START MENU

## BEGINNING THE INSTALLATION

The amount of time required to perform the installation can vary from a few minutes up to an hour or so, this depends on the state of the target machine and what software is already available.

To start the installation process, close any active programs or applications. Then insert the disk provided into the CD or DVD drive. On most machines the installation program will start automatically, however depending on the configuration of the target PC this may not happen. If this is the case follow these steps:-

If this software has been downloaded from the website then locate where it was saved and double click on the setup icon or setup.exe.

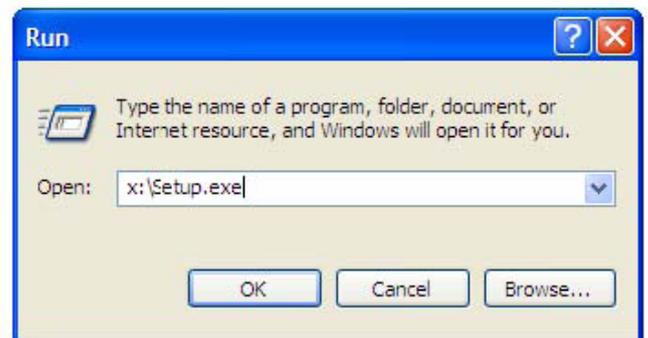


FIGURE 2 - RUN DIALOGUE

Click on the Windows™ Start button and select "Run". As highlighted in Figure 1. A small dialogue window now opens. In the text box provided type "X:\Setup.exe" replacing "X" with the drive letter associated with the drive the disk was inserted into. This step is shown in Figure 2.



FIGURE 3 - INSTALLATION PROGRAM FIRST PAGE

Figure 3 shows the first installation screen. This screen tells you the version number of the software being installed. Click on the "Next >" button to begin the installation.

The next screen allows you to choose where on your PC the software will be installed. If you are happy with the default location, click "Next" or choose a different location and then click "Next".

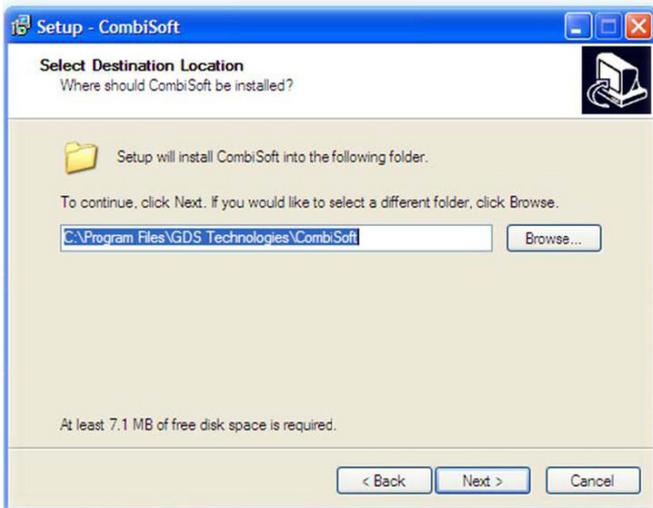


FIGURE 4 - INSTALLATION LOCATION

Note: This software cannot be installed over a network without advanced knowledge of Windows networking. GDS cannot provide support on this type of installation.

Also note that due to technical issues the text stating the amount of disk space required is not accurate. (Add at least 250MB to this figure). The above step is shown in Figure 4.

The next step (shown in Figure 5) allows you to change the location of the program as it would appear on the windows start menu. For most users it is best to leave this as it is and press the "Next" button.

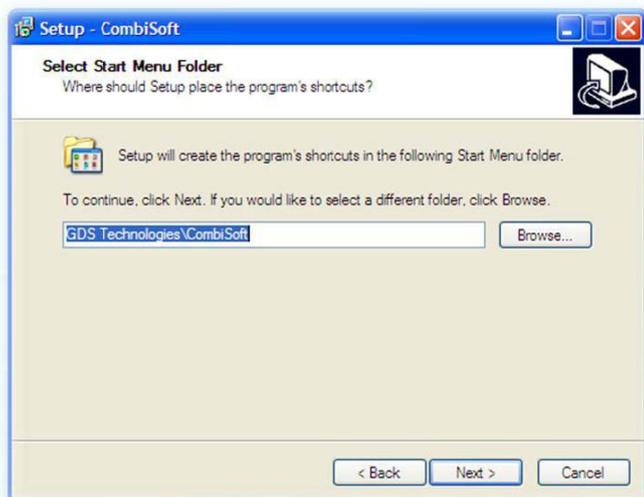


FIGURE 5 - INSTALLATION START MENU ITEM

If you feel confident to change this setting then please note that some of the instructions in other parts of this manual may not be correct for your installation.

The next stage allows you to choose if you would like an icon for the software placed on your Windows™ desktop. Most users should leave this setting as it is and press the "Next" button. (This step is not shown) Use the check box to alter the setting.

The next step outlines the rest of the installation process; this will vary depending on the software already installed on the target machine. This product makes use of some free Microsoft™ products which need to be installed beforehand. The installation of these products is automated and included on the product disk. These

products are: .NET Framework and SQL Server Express. This installation stage explains which of these products will be installed on your PC. This is shown in Figure 6.

## MICROSOFT .NET FRAMEWORK INSTALLATION

The next few steps explain the installation of the .NET Framework, however if this is not listed under "Dependencies to install" then skip past these steps.

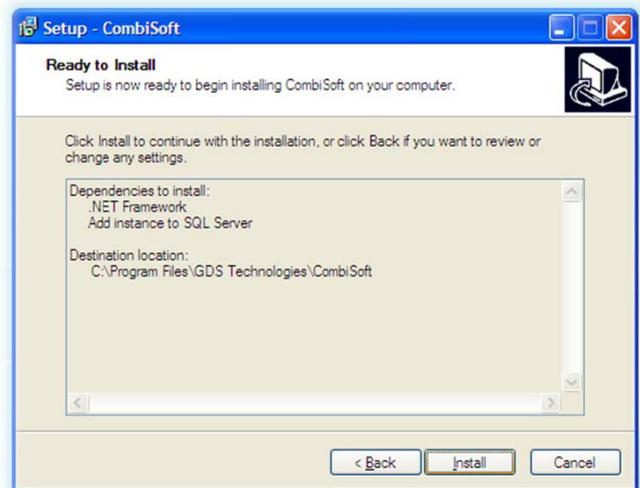


FIGURE 6 - INSTALLATION OUTLINE

The installation of the .NET Framework is fully automated by our install program and so no input is needed from the user. However a few different screens are displayed during this part of the installation.

The first part of the .NET installation is "Extracting Files". This is shown in Figure 7; this step can take a few minutes so patience is required. During this step data is transferred from the CD ROM to your PC ready to be installed.

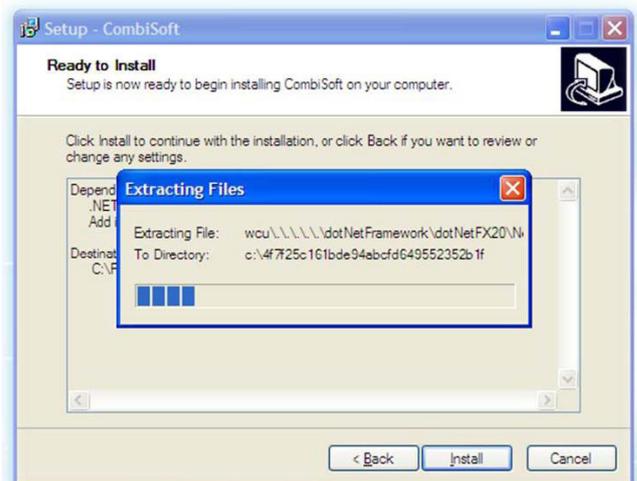


FIGURE 7 - INSTALLATION: PREPARING FOR .NET INSTALL

In some cases you may be prompted with the error shown in Figure 8. If this happens, press "Exit Setup" and follow the instructions below, otherwise skip forward to "Microsoft .NET Framework Installation continued" on page 9.

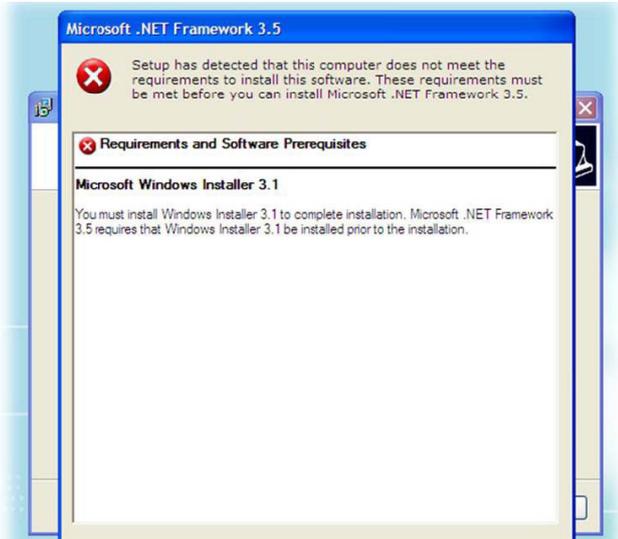


FIGURE 8 - POSSIBLE ERROR DURING INSTALLATION

This error is because the .NET Framework installation requires a program called Windows Installer, this allows the .NET Framework to be installed.

After pressing "Exit Setup" you are returned to the products installation program. Do not press any of the buttons on this screen just yet.

Instead click on "Start" and the select "Run" as depicted in Figure 1 found on page 6.

Press the "Browse" button and navigate to the CDROM drive where the installation disk was inserted. Select the file "WindowsInstaller-.....exe"

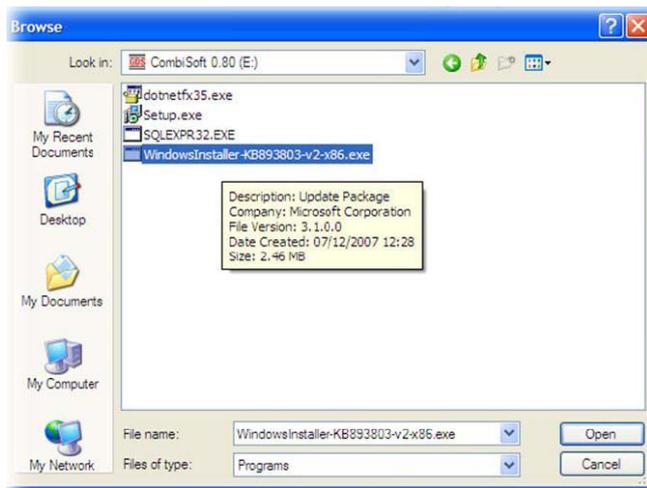


FIGURE 9 - RESOLVING WINDOWS INSTALLER ERROR

As shown in Figure 9. Now press the "Open" button and then press the "OK" button. This will start the installation of the required software.

The installation of Windows Installer is not automated however and requires a few simple steps to install it correctly. These are outlined on the following pages.

## WINDOWS INSTALLER INSTALLATION



FIGURE 10 - BEGINNING OF WINDOWS INSTALLER SETUP

The first screen as shown in Figure 10 simply explains this stage of the installation. Press the "Next" button in order to continue.

The next step (see Figure 11) shows Microsoft's license agreement. In order to continue the installation you must agree to the terms of the agreement. To do this, select "I Agree" and press the "Next" button.

The installation process starts to perform a few tasks. During this period you may be prompted by a window stating "In order to successfully complete this installation the following services will automatically be stopped and restarted." Simply press the "Continue" button to allow the installation process to resume.

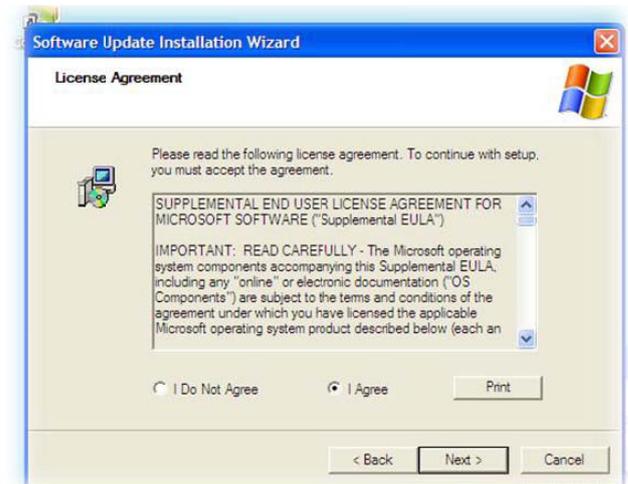


FIGURE 11 - WINDOWS INSTALLER LICENSE AGREEMENT

The installation will now continue and a blue progress bar is displayed to inform you of the installation progress. When the installation process is completed and new window is shown.

The new window informs you that the update was installed successfully and that your system needs to be restarted.

However for the purposes of installing this software you do not need to restart your system. Check the box "Do not restart now" and press the button "Finish" this is shown in Figure 12.



FIGURE 12 - END OF WINDOWS INSTALLER INSTALLATION

Provided the screen shown in Figure 6 on page 7 is still visible press the "Install" button. If this is not the case then go back to the beginning of the installation guide.

### MICROSOFT .NET FRAMEWORK INSTALLATION CONTINUED

At this point Microsoft's .NET Framework will be installed this can take some time. During this time the window shown in Figure 13 is displayed.

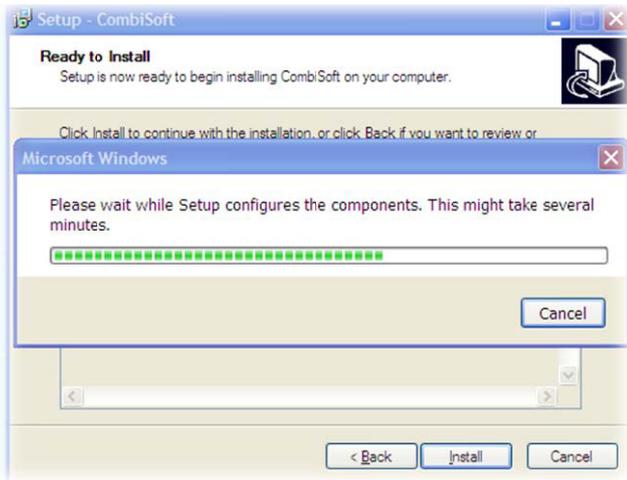


FIGURE 13 - MICROSOFT .NET FRAMEWORK AUTOMATED INSTALLATION

The Microsoft .NET Framework is an application platform (similar to JAVA by SUN™ Microsystems). This software allows programs that are written for the .NET Framework to run on your system. Therefore this component is required for the software to run on the target machine.

Once the .NET Framework has been installed another piece of software will need to be installed and configured. Microsoft's SQL Server Express database engine which is used to store data collected from sensors when the software is being used.

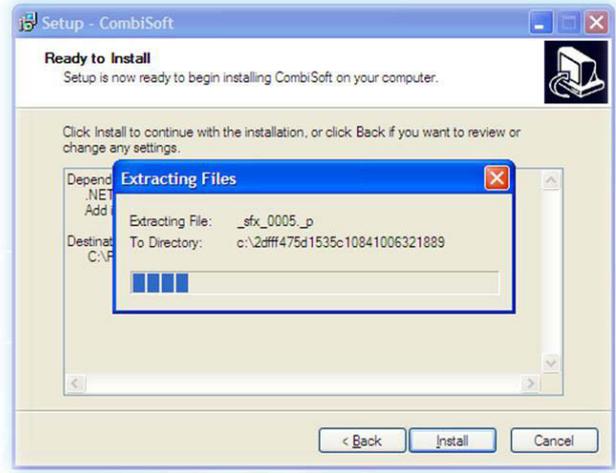


FIGURE 14 - BEGINNING OF SQL SERVER INSTALLATION

### MICROSOFT SQL SERVER EXPRESS INSTALLATION

The installation of this software is automated and controlled by our installation program so no user input is required. However a few screens of potential interest are displayed during this process.

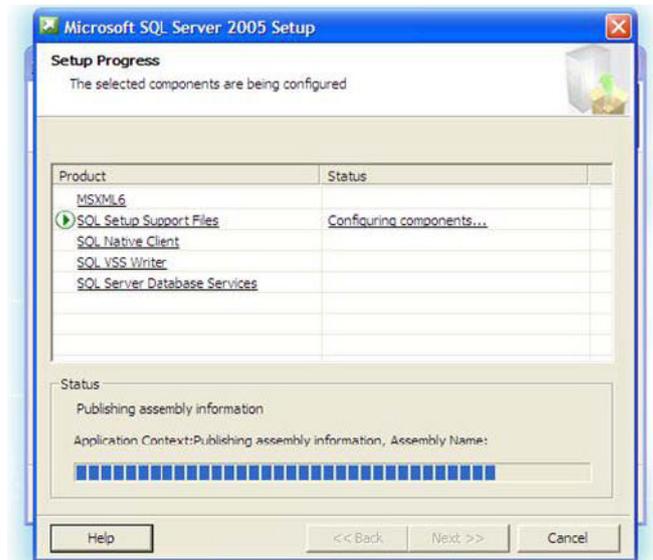


FIGURE 15 - INSTALLATION OF SQL SERVER

The first screen shown in Figure 14 titled "Extracting Files" appears while the PC copies files from the CD to the target machine ready to be installed. Once this step has completed another screen appears, again no input is required from the user. The processes involved in this part of the installation can take some time so again patience is required. Eventually a screen similar to the one shown in Figure 15 appears and this will update you on the progress of the installation.

## ERRORS THAT MAY OCCUR DURING THE INSTALLATION OF SQL SERVER EXPRESS

During the installation process for SQL Server Express you may encounter the error depicted in Figure 16. The following work around to this problem as suggested by Microsoft™ is described below.

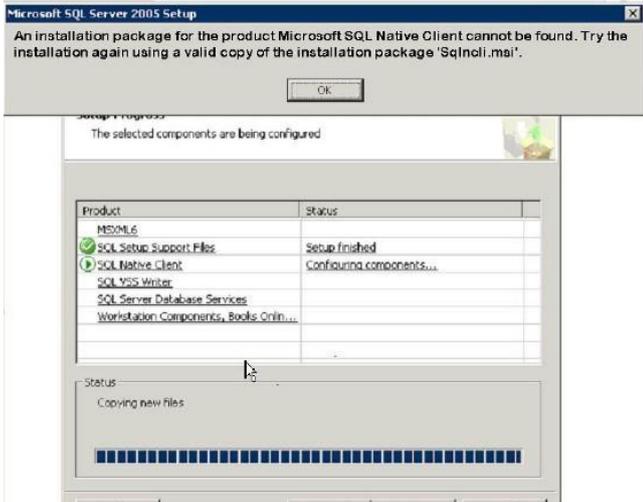


FIGURE 16 - SQL SERVER INSTALLATION ERROR

As per Microsoft Article No : 910229: 2.11 Existing SQL Native Client Installation May Cause Setup to Fail, Backup Exec setup might fail and roll back with the following error message:

*An installation package for the product Microsoft SQL Native Client cannot be found. Try the installation again using a valid copy of the installation package 'Sqlncli.msi'.*

To work around this problem:

1. Uninstall the SQL Native Client by using Add or Remove Programs.
2. On a cluster, uninstall the SQL Native Client from all nodes. Then, run SQL Server Setup again.
3. The same thing has to be done with the MS SQL VSS writer. Uninstall the existing one from Add/Remove programs, and then run setup again.

## INSTALLATION OF COMBISOFT

This is the final stage of the installation; once any required software has finished installing (detailed in the previous sections) the install program will automatically install the software showing the progress as shown in Figure 17. This stage is relatively fast. Once the installation has completed a new screen as shown in Figure 18 appears it simply asks you if you would like the program to start when you exit the install program. Un-tick or tick the box appropriately and press the "Finish" button.

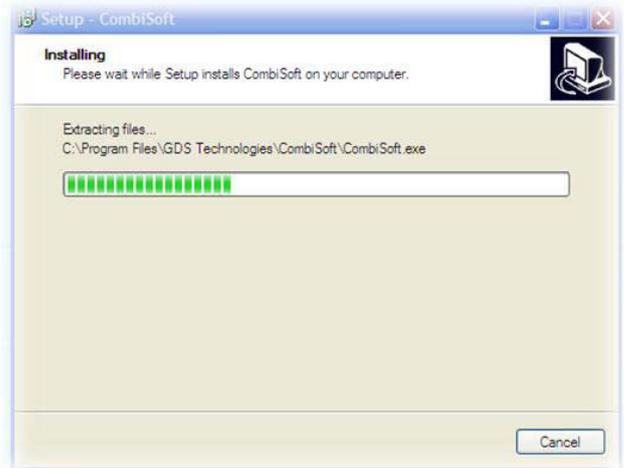


FIGURE 17 - INSTALLATION PROGRESS

## INSTALLATION TROUBLESHOOTING

If you have had any problems during the installation please do the following before contacting GDS.



FIGURE 18 - COMPLETED INSTALLATION

1. Ensure the target machine meets the required specifications. (See System Requirements on page 5)
2. Read the whole of the installation guide in full as some sections do cover common problems during the installation.

If you are still unable to install the software you can find our contact details on page 27.

# Running the Application

If the application has not been installed yet please follow the instructions found under Installation on page 6.

There are two routes to running the application, either through the icons placed on the Windows™ desktop (Figure 20) or on the start menu (Figure 19).

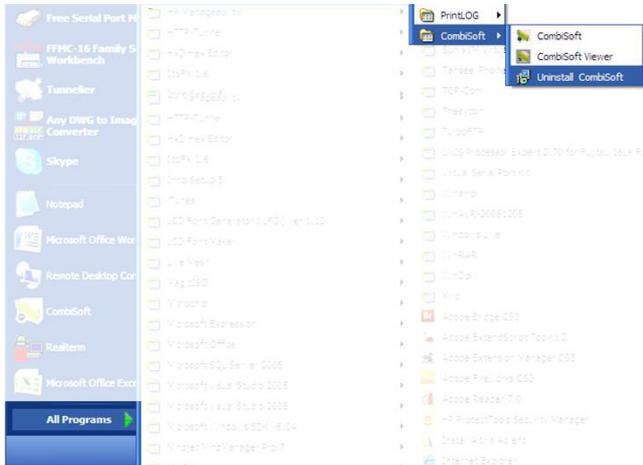


FIGURE 19 - LAUNCHING FROM THE START MENU

The software is separated into 2 applications, “CombiSoft” and “CombiSoft Viewer” the CombiSoft application deals with configuration, data logging and monitoring of sensors.

The CombiSoft Viewer application deals with data extraction following data logging.



FIGURE 20 - WINDOWS DESKTOP SHOWING PROGRAM ICONS

To start either of the applications you should double click with the left mouse button on icon. Alternatively, single click the start button also shown in Figure 20 to reveal the start menu. Click “All Programs” then click “GDS Technologies” then “CombiSoft” and finally “CombiSoft” (or “CombiSoft Viewer”) to start the program. This process is shown in Figure 19.

Depending on the machine running the software these steps may vary slightly. Once the steps are completed successfully a screen similar to the one shown in Figure 21 is shown. This is the “Home” screen of the program. Until the program has been registered using a valid CD Key and connected there is very little that can be done at this stage.

At this point a box will likely be displayed telling you this software is un-licensed. To license the software note down the unique number displayed in this box and contact GDS via details on page 27. The basic ‘viewer’ version of the software will run without license with restricted features.

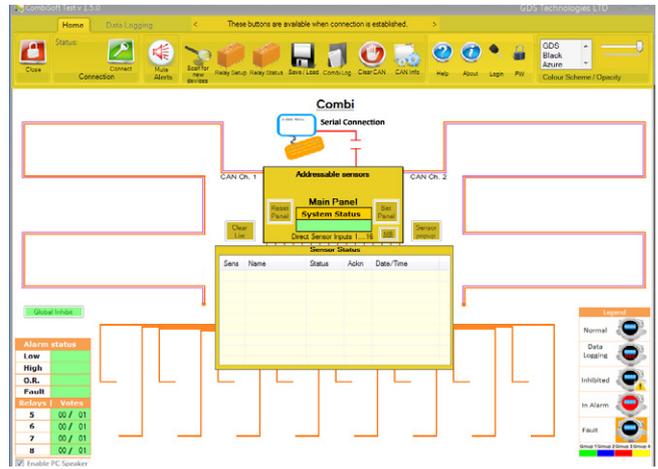


FIGURE 21 - PROGRAM LAUNCHED

Figure 22 shows a diagram explaining the layout of this screen. Figure 22 highlights 6 main areas of interest on this screen.

# HOME SCREEN LAYOUT

Most importantly the program buttons circled in purple in the diagram, these are used to control the programs various functions and features that are explained throughout this document. To find out the function of any buttons hover the mouse cursor over one for more than 2 seconds, an explanation of what the button does is displayed.

The areas that display the CAN sensors and 4-20mA input sensors are populated once a connection is formed with the Combi unit. The global alarm status and on-board relay status displays the current alarm status, these flash RED if an alarm is present in the system. The "Votes" column shows the current number of alarms in each particular group and the required number of alarms to trigger the relay associated with that group.

For more information on voting please refer to the Combi manual. The legend shows the different types of information expected to be seen in the red and green circled areas.

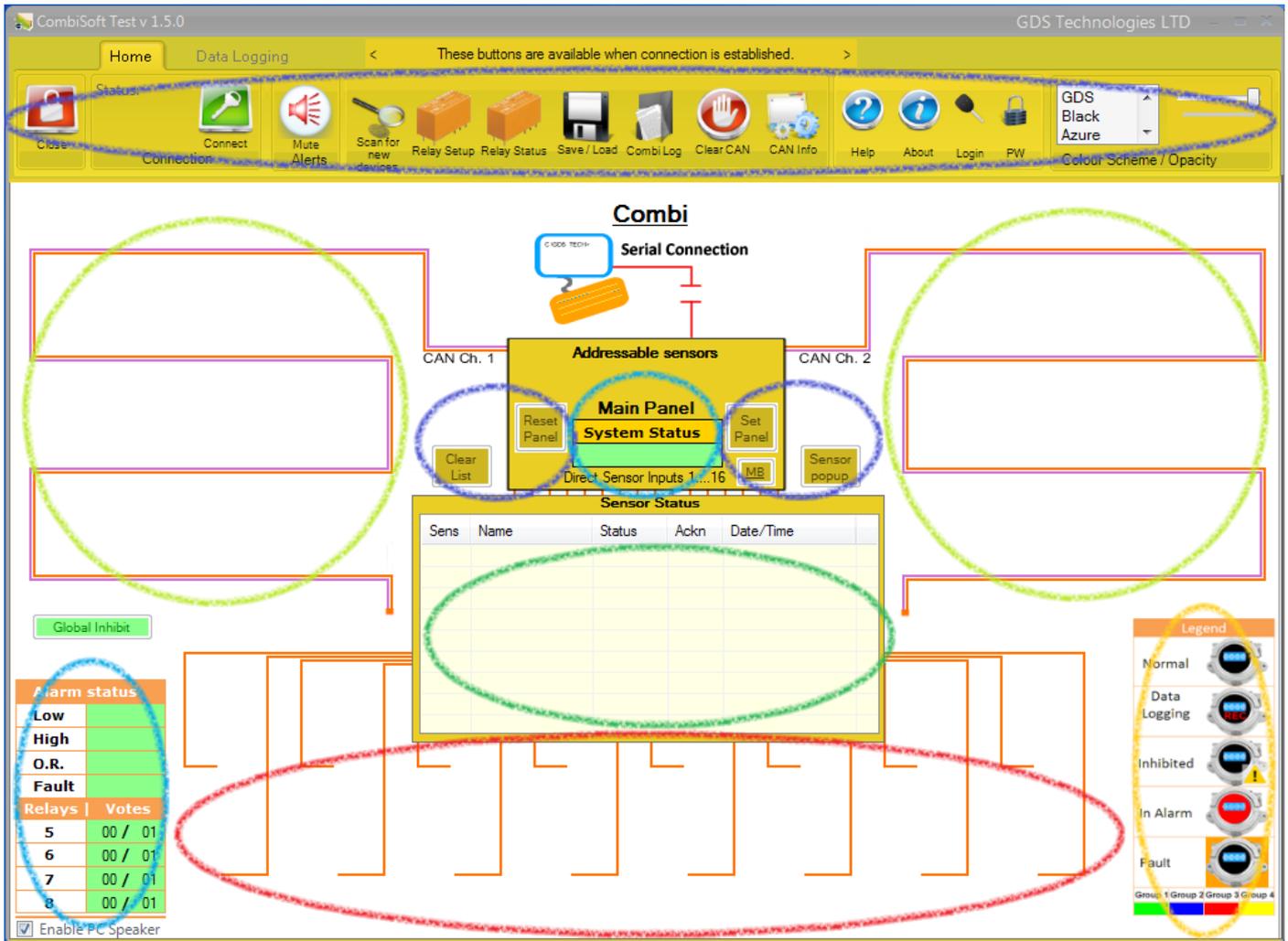


Figure 22 - Home Screen Layout

- Key:
- Program Menu Buttons
- Area displaying addressable CAN sensors
- Area displaying direct 4-20mA inputs
- Global alarm status and on-board relay status
- Legend
- Notification List

## MINIMISING THE COMBISOFT APPLICATION

When the "CombiSoft" application is logging data you can minimise the screen to hide the application so that it will run in the background. The application will also disappear from the windows taskbar. However a small icon will appear in the Windows system tray (a small area next to the clock in the bottom right of the screen.) To re-open the application, double click this icon. This icon is shown in Figure 23.



FIGURE 23 - COMBISOFT ICON IN SYSTEM TRAY

## ERROR MESSAGE "THE APPLICATION IS ALREADY RUNNING"

If when you try to start the application you get the error "The application is already running", then the program is most likely minimised and you should read "Minimising the CombiSoft Application" above.

## Connecting

In order for the software to function a connection must be opened to allow serial communication between the Combi unit and the PC.

In order for this to be possible the unit must first be physically attached to the PC. This should be done using the serial cable provided. Most PCs have an RS232 Serial COM port (highlighted in Figure 27 - Location of Serial COM port). However if your PC or laptop does not have an RS232 serial port then it is possible to use a USB serial port. Connect the USB connector into a spare USB port; install the drivers provided with the device. The USB serial port will now function as a normal serial port. An example is demonstrated in Figure 28 - USB Serial Port.

Now that the hardware is physically connected the software can be run. Follow the instructions on page 10. Now that the main program is running communication can begin with the unit. Press the "Connect" button as shown in Figure 29 - Connect Button. This starts the connection process; this should take between 5 and 60 seconds depending on the amount of sensors within the system and how busy the unit is at the time. The connection process attempts to connect 3 times.



FIGURE 28 - USB SERIAL PORT



FIGURE 29 - CONNECT BUTTON

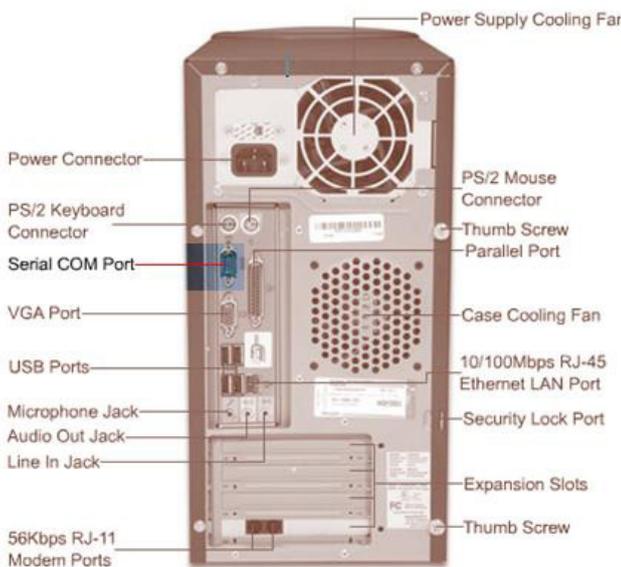


FIGURE 27 - LOCATION OF SERIAL COM PORT

There is no need to know what serial port the Combi is connected to. The software automatically detects this information.

## CONNECTION TROUBLESHOOTING

If no connection is formed after the 3rd attempt the message "GDS Product not detected" is displayed next to the connect button (Figure 29 - Connect Button).

This problem occurs because of the following reasons:

- The Combi panel is not switched on.
- The Combi panel is currently in a user menu. Go to the main panel and exit all user menus. \*
- The Combi panel version is not 2.59 or above (on board Issues A – E) or 1.00 or above on board issues F and above (contact GDS for assistance). The version number can be viewed by pressing the reset button on the main board inside the panel. Please refer to the Combi instruction manual.
- The connection between the PC and the Combi panel is faulty.
- There is no connection between the PC and the Combi panel.
- The serial cable used is incorrect, crossed over or null-modem.
- The USB serial port was not installed correctly.
- An invalid CD Key has been used. See "Entering a 28 digit CD Key" on page 13.
- In the CD Key letters such as i or l are mistaken for the number 1 or O or o are mistaken for 0.
- The noise level within the cable is too high. Try reducing the length of the data cable. (Recommended maximum 20 meters)

Apart from the problems above the system is designed to cope with various interruptions to the connection automatically. This includes the Combi panel system reset, in this case the connection re-attempts is last communications unknown to the user until a suitable response is heard. If no response is received within 30 seconds then the connection times out and the program starts the connection process again. If this fails the program stops and again the message "GDS Product not detected" is displayed. A large warning message is also displayed to grab the user s attention. This is shown in Figure 30; press the 'OK' button to clear this warning message.



FIGURE 30 - LOSS OF CONNECTION WARNING

\*Note the software will only log values from the sensors when the system is connected. Entering the menu on the panel stops this connection.

## MAKING YOUR OWN RS232 CONNECTOR

In some installations it is necessary to wire your own connector for use with this system. Refer to the diagram Figure 31 - Wiring Diagram RS232 Connector. The Combi RS232 connector provided with the Combi main panel unit is located at the bottom left of the front panel main board. Refer to Figure 32 - Location of Combi RS232 Connector.

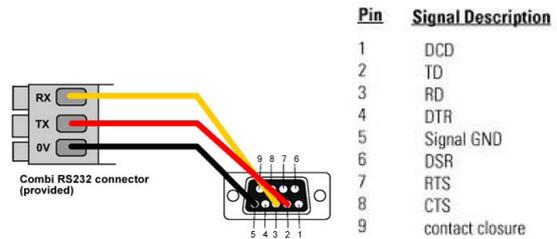


FIGURE 31 - WIRING DIAGRAM RS232 CONNECTOR

The cable should ideally be made from Belden data cable and not exceed 20 meters in length especially in an industrial environment where exposure to electrical noise is high as this could lead to a problem with connectivity. GDS Technologies cannot provide further support on data cabling and installation.

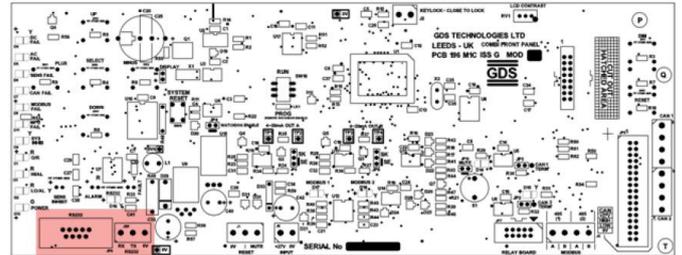


FIGURE 32 - LOCATION OF COMBI RS232 CONNECTOR

## Viewing Sensors

Any sensor within the system can be viewed on screen as a virtual sensor. This view shows the current reading and alarm status. Once a virtual sensor is on the screen the sensors settings can also be adjusted (see Configuring and Calibrating Sensors on page 17).

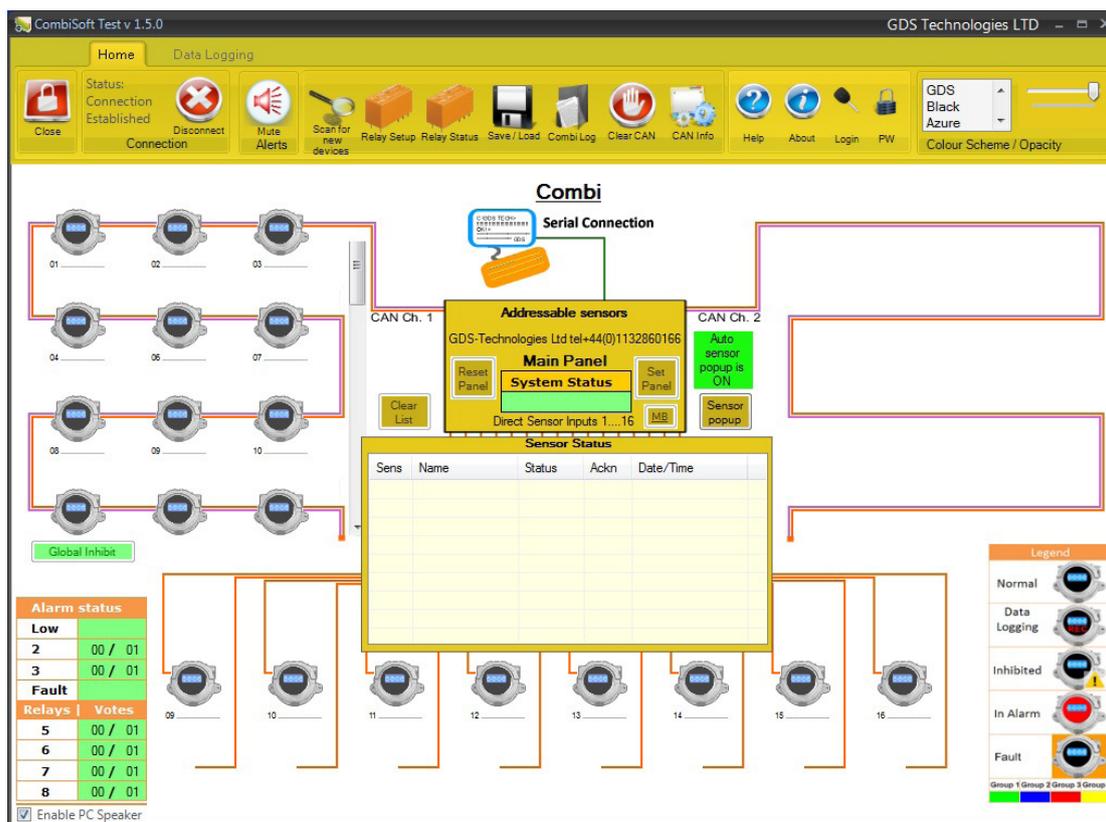


FIGURE 33 - SENSOR ICONS ON POPULATED OVERVIEW

To view a sensor make sure the program is connected to Combi (follow the instruction in Connecting on page 21), once the program is connected successfully the overview is populated with icons representing the sensors within the system, as seen in Figure 33. Use the left mouse button to double click on a particular sensor. A new virtual sensor now appears on screen (see Figure 34).



FIGURE 34 - VIRTUAL SENSOR

The virtual sensor window is fairly self explanatory. The blue box displays the sensors address, its current reading and the scale of the reading. Directly below the blue box is the sensors text and below this is the type of sensor being viewed. The box at the bottom of the virtual sensor contains the current alarm status. The arrows indicate the alarm directions, red and green indicates active and inactive alarms respectively.

Notice there are 2 small round buttons on the middle left and middle right of the virtual sensor. One of the buttons is marked „X“ and the other „>“. The „X“ button is used to close down a virtual sensor. The „>“ button is used to configure the settings associated with this sensor. For more information on configuration on the sensor refer to Configuring and Calibrating Sensors on p17. The virtual sensor can be move to any position on the screen. To do this simply click and hold the left mouse button on the grey area around the sensor and drag the mouse to the desired position on the screen.

Any number of virtual sensors can be viewed at any one time. On some older PCs it may be advisable not to open too many. If your screen is small and only a few sensors can be viewed, try increasing your monitor s resolution by right clicking on the Windows desktop, click properties and then select settings.

## Configuration from PC

Many but not all of the Combi s features and sensors can be configured from the PC using this software. It is possible to configure any of the sensors within the system, including calibration. Other settings are those associated with the main panel itself.

### CONFIGURATION / ADMINISTRATOR PASSWORD

Any part of the program that allows the user to alter the systems configuration is password protected.

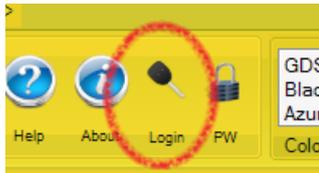


FIGURE 35 - PASSWORD Login BUTTON

### ENABLING ADMINISTRATOR/ENGINEER ACCESS

To access the password protected systems configuration select the button labelled "Login" found on the "Home" tab. As shown in Figure 35. A new window appears as shown in Figure 37. To enable the password tick the box labelled "Enable administrator password?" and click the button labelled "OK".

Logged in as admin:297 Logout

FIGURE 36 - ADMINISTRATOR TIMEOUT

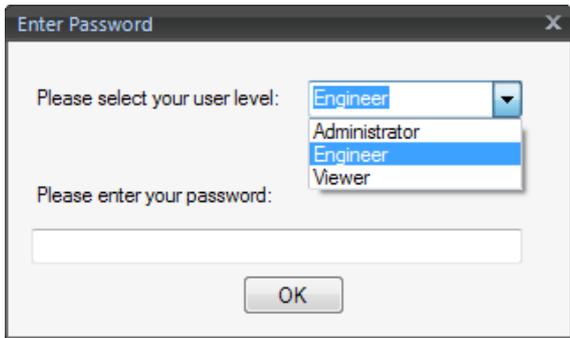


FIGURE 37 - PASSWORD SETTINGS

### LOGGING OUT OF THE ADMINISTRATOR ACCOUNT

Whenever you are prompted for the administrator password this logs into the administrator account for 5 minutes (300 seconds), every time a setting is accessed that requires the password this time is reset to 300 seconds. After 300 seconds the administrator password is logged out and the password will need to be re-entered. To log out without waiting 300 seconds simply press the blue text "Logout" in the bottom middle of the "Home" tab screen. Here you will also find the remaining time left in the admin account.

## DEFAULT ADMINISTRATOR PASSWORD

When the program is first installed the default administrator password is: **Administrator**

The password for default engineer is: **Engineer**

Please note that the administrator password is case sensitive.

### CHANGING THE PASSWORDS

To change any password click on the "PW" button with the picture of a padlock in the "Home" tab. The box shown overleaf will appear. Type the new password in the two text boxes labelled "Enter new password" and "Repeat new password" shown overleaf. Then press the button labelled "Change...". The password is instantly changed and the administrator/Engineer account is logged out. Note the Administrator/Engineer must be logged in to access this option.



### CONFIGURING THE COMBI FRONT PANEL

The Combi main panel settings screen can be accessed by pressing the button marked ">" shown on the main panel in the overview diagram shown on the "Home" tab. This step is highlighted in Figure 39. Pressing this button generates a new window displaying all the settings for the main panel; as shown in Figure 38.

### SETTING THE COMPANY TEXT

The company text is the text shown on the 4th line of the front panel s LCD display. In order to change the company text, edit the text shown in the box provided (which may in some cases be blank) to the desired text and press the "Save" button.

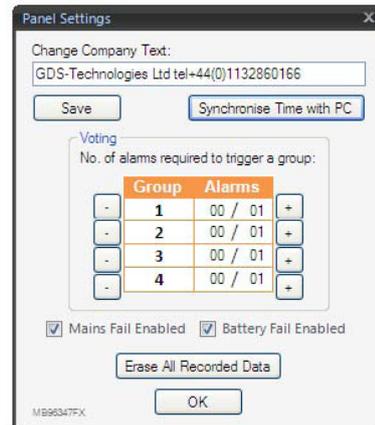


FIGURE 38 - PANEL SETTINGS WINDOW

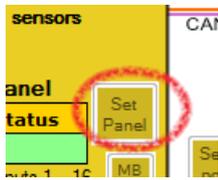


FIGURE 39 - OPEN MAIN PANEL SETTINGS

## SETTING THE TIME

The front panel's time can be updated by pressing the "Synchronise Time with PC" button. This sets the time on the front of the PC so that it exactly matches the time of the PC.

Note: A time synchronisation occurs whenever a connection to the front panel is made using this software. This feature cannot be disabled as different times on the PC and main panel would cause confusion between logged data. Therefore it is important to make sure the PC is updated with the correct time and date.

## VOTING

This is the number of alarms within a group required to trigger the group relay (on the Combi main board). For more information regarding this feature refer to the Combi manual. To set the voting threshold for a particular group, use the buttons marked "+" and "-" associated with each group. This will increment or decrement the number on the right hand side of the "/". The number on the left hand side shows the current number of alarms within each group.

## SETTING THE POWER ALARMS

There are 2 power alarms that can be configured from this menu. These trigger the fault relay on the main board. These alarms can be either enabled or disabled. Adjust this setting by ticking or un-ticking the appropriate tick box.

When all desired settings have been configured, use the "OK" button to return to the main program.

## CONFIGURING AND CALIBRATING SENSORS

Each sensor in the system can be configured remotely using this software. The only difference between direct and addressable sensors regarding this menu is that the gas type is not configurable for addressable sensors. This is because the addressable sensors are built in factory for a specific gas and cannot be altered.

To configure a sensor firstly open the desired sensor. To do this follow the instructions found in Viewing Sensors on page 24. There is now a small window in the shape of an addressable sensor as shown in Figure 40. To open the configuration page click on the small button marked ">" as highlighted in Figure 40. This extends the sensor window to reveal all the settings and some further information about the sensor being viewed. This view is shown in Figure 41.



FIGURE 40 - OPEN CONFIGURATION FOR A SENSOR

## CHANGE THE SENSOR TEXT

This is the text associated with a particular sensor in the system. It appears on the front panel's LCD and is also used in this software as a reference to the sensor.

This text can be changed by editing the existing text in the box provided, and then pressing the "Save" button. Note the sensor text is stored at the main panel and not in the sensor. The sensor text can be no longer than 20 alphanumeric characters long.



FIGURE 41 - SENSOR CONFIGURATION

## SETTING ALARM LEVELS

There are 3 alarm levels: low, high and over-range (O.R.). To set an alarm level, change the number inside the appropriate box to the desired alarm level. Now press the "Save" button.

## SETTING ALARM LATCHES

The alarms for each sensor can be latched or unlatched. A latched alarm remains on until the user acknowledges the alarm by pressing the "Reset" button on the front panel or the button marked "R" on the main panel overview in this software. An unlatched alarm is automatically cleared when the alarm condition is no longer present.

To alter this setting tick or un-tick the check box for the appropriate alarm.

## SETTING ALARM DIRECTIONS

The alarm direction controls if the alarm is to be active on when the value changes from below the limit to above the limit (a rising alarm) or from above the limit to below the limit (a falling alarm). More information can be found in the Combi manual.



FIGURE 42 - ICON DISPLAYING A SENSOR 58 BELONGING TO GROUPS 2,3 AND 7

There are 3 buttons marked with either a “v” or a “^” representing falling and rising alarms respectively. To toggle between rising and falling alarms click the button for the appropriate alarm level. This setting is independent for each of the 3 alarm levels.

## CONFIGURING THE SENSOR GROUPS

Any sensor can be in any number of the 8 available groups. For more information on groups refer to the Combi manual. To place a sensor in a particular group tick the box that corresponds to the desired group. Each sensor can be in more than one group or no groups. Once a sensor belongs to a group the icon representing it on the “Home” tab changes so contain a colour code representing the groups 1 to 4 and numbers for groups 5 to 8 that it belongs to. This is shown in Figure 42 along with the legend which can also be found on the “Home Tab”.



FIGURE 43 - SENSOR ICON INDICATING AN INHIBITED SENSOR

## INHIBITING A SENSOR

If a sensor is inhibited then it does not respond to changes to the alarm condition. This is used to prevent false alarms when changing the settings of a sensor or when working on a system. If a sensor is left in inhibit mode it will eventually return to its normal function to prevent inhibit accidentally being left on. More information on inhibiting sensors can be found in the Combi manual.



FIGURE 44 - GLOBAL INHIBIT BUTTON

To inhibit a sensor click the “Inhibit Sensor” button once. The text on the button changes to say “Resume Sensor” and the icon shown on the overview display found under the “Home” tab indicates that the sensor is inhibited (see Figure 43). Pressing the button again clears the inhibit mode and returns the button text and the sensors icon to its original state.

## GLOBALLY INHIBITING SENSORS

If you need to inhibit all the sensors in the system rather than individually inhibiting each sensor in the way described above. Simply click on the green button marked “Global Inhibit” as shown in Figure 44. This button will turn red, when the global inhibit is active. The sensor icons will also display the inhibit symbol, this is shown in Figure 43.

## CHANGING THE GAS TYPE

This setting is only available for the 16 direct sensors. Addressable sensors have a fixed value for gas type. This setting automatically adjusts the scale used for the selected gas. To change the gas type, select the appropriate gas from the list. Notice that the scale automatically changes once this has been completed.

## CALIBRATING A SENSOR

Sensor can be remotely calibrated using this software. This allows them to be zeroed and calibrated using a test gas.

To begin calibration follow the instructions under the heading “Configuring and Calibrating Sensors” on page 17. A screen similar to that shown in Figure 41 on page 17 is should now be visible. Press the button labelled “Calibrate Sensor” on the bottom right hand side of the current view. This area of the window now changes to the one shown in Figure 45. Now follow the instructions under the heading “Inhibiting a Sensor”.

## ZEROING A SENSOR

If the sensor does not need zeroing then press the button marked “>” to skip this step. Otherwise make sure the sensor is in a neutral atmosphere and press the “Zero Sensor” button. The reading on the sensor should change to “0.00” (approximately). You may wish to zero a few times to get rid of any noise affecting the zero.



FIGURE 45 - CALIBRATION: ZEROING

To complete the zero press the button marked “>” to continue.

## CALIBRATING THE SPAN

The calibration area is now as shown in Figure 46. Apply the appropriate test gas to the sensor for the correct amount of time (refer to the sensor cells manufacturers datasheet). Once the sensor has been spanned the test gas can be removed. The value will not drop because the sensor is using peak readings. Return to the PC and enter the value of the test gas into the box labelled "Gas Value:" then press the "Go" button. Now wait for the message in red writing "Calibration Complete" once this is displayed press the "Finish Calibration" button to save the calibration settings.

The calibration process is the same for both direct and addressable sensors.

The calibration process can be cancelled in order to change the value of the span gas in the case a mistake was made. This is done by pressing the cancel button which appears when "GO" has been pressed.



FIGURE 46 - CALIBRATING: SPAN

## CALIBRATING MULTIPLE SENSORS

It is also possible to calibrate more than one sensor at a time. This is done by opening some or all the sensors in a system, zeroing, and then applying the span gas, returning to the PC and spanning individually.



FIGURE 47 - RELAY SETUP BUTTON

It is recommended to calibrate sensors with matching gas types to avoid confusion with different gasses.

## CONFIGURING THE RELAY BOARDS

Each relay board contains 32 relays. Up to 2 relay boards can be connected to the Combi main board in series. Any of the 64 relays can be assigned to a particular alarm or event.

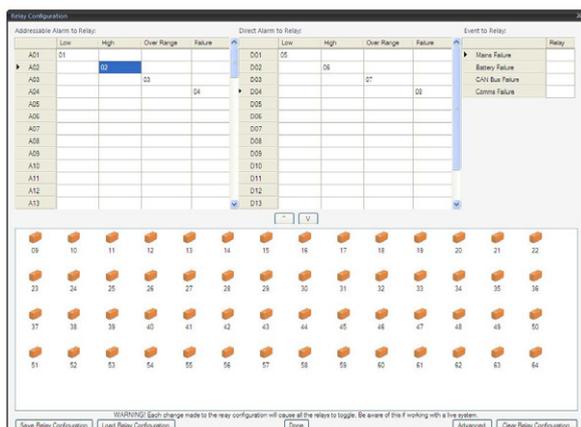


FIGURE 48 - CONFIGURATION OF RELAYS

To begin configuring the relay boards click the "Relay Setup" button found on the "Home" tab as highlighted in Figure 47.

After a short loading screen a new window used to configure the relay settings appears. There are 4 main areas of this window. Along the bottom is a bank of available relays. In the top left hand side are two spreadsheets showing the configuration of addressable alarm to relay assignment, to the right of this for direct alarm to relay configuration. In the top right hand side of this window is a small spreadsheet displaying the configuration of event to relay assignment.

## ASSIGNING ALARMS TO RELAYS

To assign a relay to an alarm to a relay select the cell or box in the desired alarm spreadsheet (either addressable or direct) using a single click of the left mouse button. The selected cell will turn blue as seen in Figure 48. Then select the relay to be assigned to this alarm using a single click of the left mouse button on the icon representing the relay. Now press the button marked

"^". The relay now disappears from the relay bank and the number of the relay appears in the selected cell or box. It does not matter if a relay is already assigned this process will automatically remove the existing relay and place it back in the relay bank. To remove an alarm - relay association, select the cell or box in the spreadsheet that represents the alarm relay association and click the button marked with a "V". The contents of the cell are erased and the relay is returned to the relay bank. See Figure 48.

## ASSIGNING EVENTS TO RELAYS

To assign a relay to an event select the cell or box in the event spreadsheet on the top right using a single click of the left mouse button. The selected cell will turn blue. Then select the relay to be assigned to this event using a single click of the left mouse button. Now press the button marked "^". The relay now disappears from the relay bank and appears in the selected cell or box. It does not matter if a relay is already assigned this process will automatically remove the existing relay and place it back in the relay bank.

To remove an event relay association, select the cell or box in the spreadsheet that represents the event relay association and click the button marked with a "V". The contents of the cell are erased and the relay is returned to the relay bank. See Figure 48.

## ADVANCED RELAY SETTINGS

To allow greater customisation of how the relays are controlled, some advanced settings can be applied to the first 16 relays on the remote relay board. Further settings also exist for the on board relays (Global Low, Global High, Global Over Range, Global Fault, Option 1, Option 2, Option 3 and Option 4).

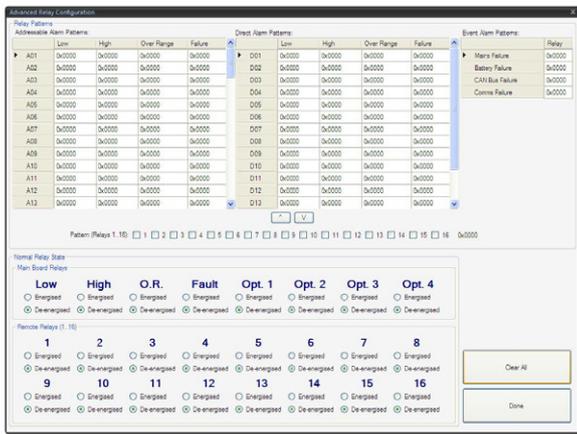


FIGURE 49 - ADVANCED RELAY CONFIGURATION

To access these advanced settings click on the button labelled “Advanced” as shown in Figure 48 (bottom right). This opens a new window that is similar in layout to the previous one.

### ASSIGNING RELAY PATTERNS TO ALARMS

A pattern of relays 1 to 16 can be assigned to any alarm within the system. Simply use the check boxes along the centre of the screen to input your pattern, (active or inactive); this generates a hexadecimal code that represents your selection. Now find the cell in one of the two spreadsheets representing alarms. The one on the left is for addressable sensors; the one on the right is for direct sensors. Now click the button

marked “^” to transfer the selection into the spreadsheet cell. To view a pattern already installed in the system, select the appropriate cell and click the button marked “V” the pattern is instantly transferred to the check boxes.

### ASSIGNING RELAY PATTERNS TO EVENTS

There are 4 events available. (Mains failure, Battery Failure, Can bus failure and Modbus communications failure). Each of these can be assigned a pattern to appear on the remote relay board across relays 1 – 16. To assign a pattern simply select the pattern using the check boxes along the centre of this window shown in Figure 49. Then highlight the appropriate cell that represents the event that the pattern will be assigned to. Now press the button marked “^” to transfer the pattern into the cell. Existing patterns installed into events can be viewed by selecting them and pressing the button marked “V”.

### CONFIGURING NORMALLY ENERGISED / NORMALLY DE-ENERGISED

This setting allows remote relays 1 – 16 and the 8 on board relays normal state to be configured. For example normally energised or normally de-energised. This setting is effectively a way of inverting the operation of any of these relays. To change the normal state

of a relay simply select the circular radio button that represents the desired relay and the normal state that is required. **WARNING!** This change occurs instantly at the panel so be aware of this when working on a live system.

### SAVING A RELAY CONFIGURATION TO DISK

As relay configurations can be quite complex it is possible to save the relay configuration to the PC's hard disk drive, or other media. This file can be uploaded to any Combi system requiring the same relay configuration. This feature is intended as a backup tool so that the system can be reconfigured quickly in the event of a failure or replacement.

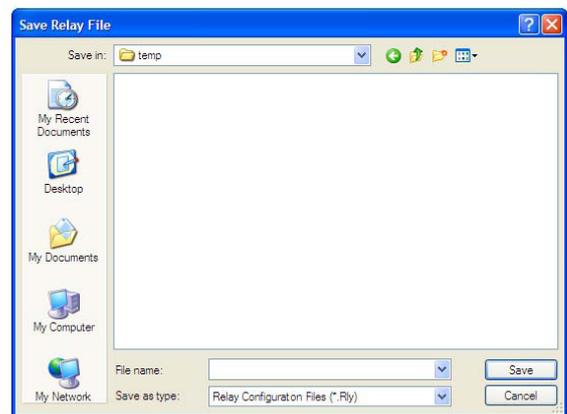


FIGURE 50 - SAVING RELAY CONFIGURATION

On the relay configuration window as seen in Figure 48, there are 2 buttons in the bottom left, “Save Relay Configuration” and “Load Relay Configuration”. To save the configuration, click the button “Save Relay Configuration”. A standard windows save file dialogue window is now displayed (Figure 50). Use this to locate a suitable area on your PC to save the file and choose a name by entering it in the “File name:” box. Press the save button. The relay configuration is saved as an “.Rly” file. This file can only be opened using this software. NOTE: This does not save the advanced relay settings. See Backing up the Combi System on page 21 for further information.

### LOADING A RELAY CONFIGURATION

To load a relay configuration from disk click the “Load Relay Configuration” button. This displays a standard windows open file dialogue window. Use this to locate the “.Rly” file that the configuration was previously saved to. Then press the “Open” button, a loading screen appears for a few seconds as the configuration is transferred to the Combi. Now the relay configuration is displayed showing the new configuration, changes can be made to the configuration at this point if needed. When finished press the “Done” button to return to the main program.

## CLEARING THE RELAY CONFIGURATION

In the bottom right of the relay configuration window is a button labelled "Clear Relay Configuration". A short loading screen follows and all the relays are removed from the configuration spreadsheets and returned to the relay bank or list.

## BACKING UP THE COMBI SYSTEM



FIGURE 51 - SAVE / LOAD CONFIGURATION BUTTON

As there are many different settings associated with each sensor, relay boards and main panel. All the settings that can be controlled using this software can be backed up into a single file. This is good practice in case of a failure or replacement of the system. This backup also includes the relay configuration, which can also be saved independently (follow the instruction found under

To save or load a configuration file to disk, click on the "Save / Load" button on the "Home" tab (highlighted in Figure 51).

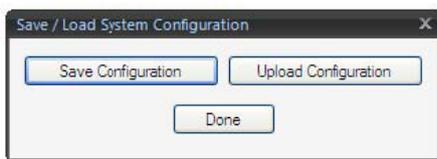


FIGURE 52 - SAVE / LOAD SYSTEM CONFIGURATION FILES

Pressing this button generates the window shown in Figure 52. This window has 3 buttons, one button is used to save the configuration, another to upload a configuration already saved to disk, the other button, marked "Done" simply closes this window once the save or upload is completed.

This will also save the advanced relay and standard relay settings.

## SAVING THE SYSTEM WIDE CONFIGURATION TO DISK

To save the system configuration to disk press the "Save Configuration" button shown in Figure 52 (note there is a short delay at this point). This opens a standard Windows save file dialogue window similar to that shown in Figure 50. Choose a suitable location to store the file and then give it a name by typing it in the "File name:" box, then press the save button. The file saved is a „.Gas file and can only be used with this software.

## LOADING A SYSTEM WIDE CONFIGURATION FROM DISK

To load a system configuration already saved on disk press the "Upload Configuration" button visible in Figure 52. This opens a standard Windows open file dialogue window similar to that shown in Figure 50. Locate the „.Gas file containing the configuration and select it with a single click of the left mouse button. Then press the

"Open" button, a progress bar shows the progress of the upload operation. To exit this menu and return to the main program press the "Done" button.

## Monitoring

This software is designed to be used within a control room or monitoring station. It has various features to alert users to faults and alarms and assist the diagnosis of alarms and faults. The software is flexible and there are various different ways in which the software can be used as monitoring platform. So methods the user may choose to use may vary due to personal preference. The two main types of monitoring provided by this software are „active monitoring and „passive monitoring.

### ACTIVE MONITORING

Active monitoring is where the user has all the required data on screen all the time and constantly monitors the data visually. It is for the user to decide if there is a fault, alarm or problem.

Active monitoring is setup by simply opening the sensors for monitoring (see instructions under "Viewing Sensors" on page 24). Once all the sensors are open arrange them in a suitable layout onscreen.

### OPACITY

The opacity or transparency of the virtual sensors can be altered to assist active monitoring. This allows data from other monitoring software or sensors to be visible even though it may be behind the sensors shown by this software.

To adjust the opacity press the button marked ">" on the desired virtual sensor, this is shown in Figure 40 on page 17. At the bottom right hand side of the settings page (shown in Figure 41 on page 17) under "Display Mode" drag the slider back and forth to find the desired opacity level. To allow a virtual sensor to fall behind other windows or programs running uncheck the "Always on top" tick box on the settings page described above.

### PASSIVE MONITORING



FIGURE 53 - THE MUTE BUTTON

Passive monitoring does not require the same level of user attention as active monitoring. However it relies on the system determining the faults, alarms and or problems. This software uses both visual and audio warnings to alert users when an alarm or fault condition occurs.

To begin passive monitoring use the home tab with the overview display visible, (as shown in Figure 33). Make sure that the "Mute" button shown in Figure 53 is not active (has a red speaker symbol on it); this ensures the alarm sound can be heard. Also check the PC's speakers are active and switched on.

When a fault or alarm condition occurs within a system the alarm sound can be heard from the PC speakers. To mute this press the mute button once, the speaker will turn from red to white. Do not forget to cancel the mute after the alarm is clear or future alarms will not be heard.

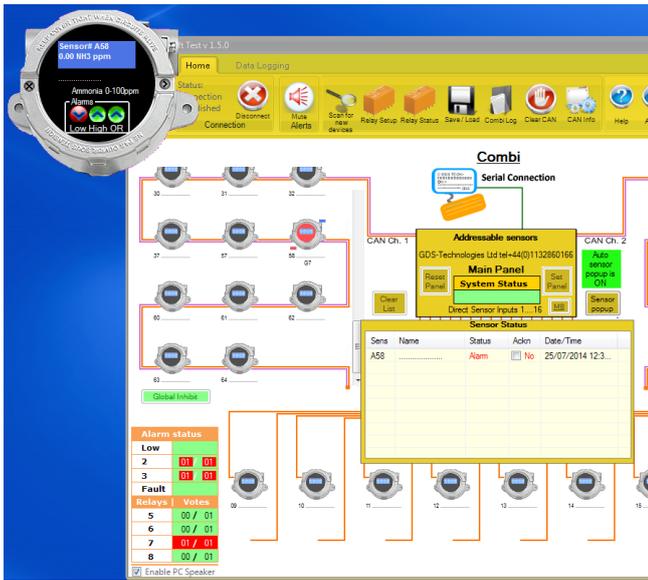


FIGURE 54- PASSIVE MONITORING SHOWING ACTIVE ALARM

The alarm sound is used to attract the user's attention, to direct the user to the source of the fault or alarm the affected sensor(s) icons flash red to indicate an alarm condition and orange to indicate a fault condition. The global alarm indicators in the bottom left hand side also flash red for alarms and orange to indicate faults. The virtual sensor icon for the sensor in alarm/fault will also popup automatically and the event will appear in the Sensor status list as shown in Figure 54. Automatic virtual alarm popups can be deactivated/activated by clicking the "Sensor popup" button.

If an alarm is latching it may be required to press the button marked "R" in order to clear the alarm. This is also equivalent to pressing the "Reset" button on the front panel.

### MAIN BOARD SPEAKER ALARM

When a fault or alarm condition occurs within a system the alarm can also be heard from the systems main board speaker. This can be disabled by un-checking the tick box that can be found in the bottom left of the "Home" tab (not visible in Figure 47).

### REFRESHING THE SYSTEM OVERVIEW – "SCAN NET"

In the case that sensors are added or removed from the system the user can press the button labelled „Scan Net" under the tab labelled „Home". This re-establishes the list of sensors connected to the Combi main panel and updates any changes.

## Data Logging

Data logging is the core function of this software. The software records the collected data in a SQL Server database. This database is stored on the PC's hard disk and is not accessible to the user. Data can be logged from up to 80 sensors at once. Each sensor can have an independent sample rate. Once collected data can either be viewed in a table or plotted to a graph. Data can also be exported to Microsoft Excel 2007 automatically.

### SETTING THE SAMPLE RATE

To set the sample rate of a sensor, follow the instructions found in the first paragraph of "Configuring and Calibrating Sensors" on page 17. A virtual sensor should now be on screen with the configuration page open as seen in Figure 41. Under "Logger Settings" adjust the time displayed using the up and down arrows or typing a number. This setting is highlighted in Figure 56. Note that setting the sample rate does not start the logging of data. The default sample rate is 1 reading per second. Once done these settings are automatically saved and are restored next time the program is run.



FIGURE 55 - DATA LOGGING CONTROLS



FIGURE 56 - SETTING THE SAMPLE RATE

### START LOGGING

To begin logging of data select the "Data Logging" tab. This tab is shown in Figure 55. The list on the left hand side of the menu bar contains a list of all the available sensors. The list further towards the right hand side of the menu bar contains a list of sensors currently being logged (this list may be empty). To begin logging a particular sensor, select it in the list on the left hand side and press the green „+ button (or simply double click) as can be seen in Figure 55. Data is

now being logged at the rate specified when the sample rate was set (default 1 second) refer to the instructions under "Setting the Sample Rate" above. Notice the icon representing the sensor now has a flashing red "REC" text inside it. This is shown in Figure 57.

## STOP LOGGING



FIGURE 57 - SENSOR RECORDING

To stop logging data select the "Data Logging" tab as seen in Figure 55. Select from the list of "Currently Logging" sensors that you want to stop logging. Click the red "-" button to remove it from this list (or simply double click). Data logging for the selected sensor has now stopped. The flashing "REC" text on the icon representing the sensor as shown in Figure 57 has now also stopped.

## FILTERING DATA

It is possible to filter the recorded data to reduce noise. Filtering also reduces the amount of data stored on the PC. This is not the same as reducing the sample rate. The sample rate is unaffected by filtering. However a number of samples (decided by the filtering factor) are averaged out, and only one record or value stored in the database. This is more accurate than simply reducing the sample rate because the value stored represents the average value during the filtering period. To calculate the filtering period:  $\text{Filtering Period} = \text{Sample Rate (seconds)} \times \text{Filtering Factor}$

The filtering factor specifies the number of points that are averaged together. Figure 58 shows an example of the filtering process. The orange curve shows normal unfiltered data with a sample rate of 1 second. The blue curve shows the same process with a filtering factor of 10.

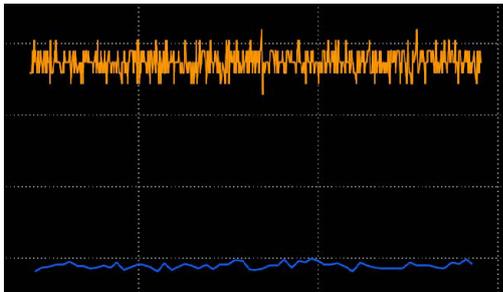


FIGURE 58 - FILTERED DATA

To setup the filter follow the instructions found under Configuring and Calibrating Sensors on page 17.

Under the section labelled „Logger Settings“ as shown in Figure 59 tick the check box labelled „Enabled“ this makes the filter active. Now use the up and down arrows next to the number labelled „Factor: x“ to adjust the filtering factor. Once this has been done the settings are automatically saved and will remain next time the program is run. Filtering can be enabled or disabled at any time without causing any problems.

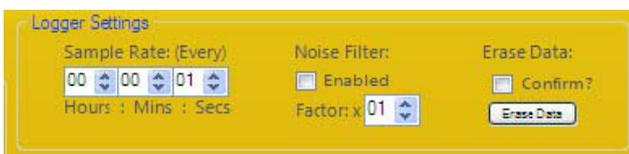


FIGURE 59 - FILTER SETTINGS

## CombiSoft Viewer – Data Extraction (Plot, Table, Export)

This section explains how to extract and analyze the data collected during data logging. All of these functions can be done at the same time as data logging is taking place. Also it is possible to run more than one instance of the "CombiSoft Viewer" application if it is necessary to view more data on screen at once.

## APPLICATION LAYOUT

The layout of the viewer application is very simple and is designed to be similar to the layouts used in familiar Microsoft applications. There are a series of icons and controls across the top of the screen; these are used to access the various features of the application. Below this there are two tabs, they are labelled "Data" and "Graph" clicking these tabs switch the main area (shown to be dark grey in Figure 60) between a table view and a graph view.

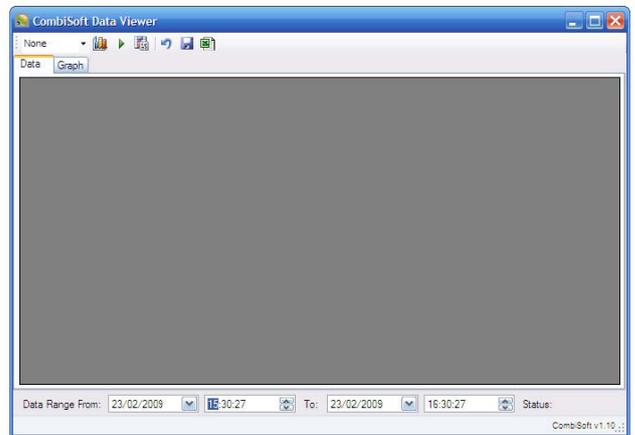


FIGURE 60 - VIEWING APPLICATION LAYOUT

## TABLE VIEW OF DATA

The table view allows you to see any data collected on a particular sensor that has been logging, by date and time. The data presented in the table consists of:-

- Date and time of the record
- Value of the record
- The alarm status of the record

Note: The data table provides no information on the scale or type of sensor; it is up to the end user to determine this information.

## SELECTING DATA

Firstly it is necessary to select the sensor of which data is to be viewed. This is done by selecting the (down arrow) in the top left hand corner of the screen. (Shown in Figure 60, next to the label "None") It is then possible to restrict the data within the table by date and time. This is done by changing the values of the "Data range" at the bottom of the screen, as these values are changed the data in the table will automatically update.

Pressing the button will produce a table of data when in the graph view.

## REFRESHING THE DATA

If data is being viewed close to the real-time boundary it may be necessary to get the table to refresh in order to display new results. To do this, press the (refresh) button.

## SAVING THE DATA TO DISK

Data from the table can be saved to disk so that it can be analysed or worked with on other PCs. However this process is not as straight forward as when normally saving a file, there are various factors and features to be aware of. The save feature is activated by pressing the (save button). A new window allowing you to choose a location to save the data in and to choose a name for the data file appears once the "Save" button is pressed then a new window appears as shown in Figure 61 - Saving to Disk (Options) Figure 61 will now appear, the options it provides are explained in the coming sections.

## THE CSV FORMAT

The data is saved using the open standard of C.S.V. (comma separated value format); this format is used because it provides a very simple format offering great portability for the data. The only drawback to this format is that the data file size can be very large, however on modern PCs this shouldn't be a problem.

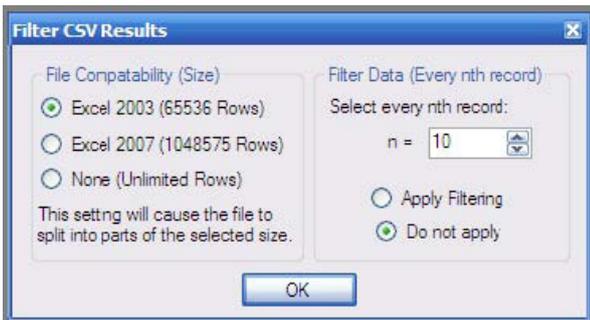


FIGURE 61 - SAVING TO DISK (OPTIONS)

## FILE SPLITTING

Most users are likely to open the CSV files in a version of Microsoft's Excel spreadsheet program, the problem being that versions of Excel up-to Excel 2003 support a maximum of 65,536 rows and Excel 2007 and above support up-to 1048575 rows, this means if the data being extracting exceeds the limits of the program being used to open the CSV file then either the file will not open or only the records up to the limit will be visible.

To get around this problem when the save button is pressed the window shown in Figure 61 allows you to split the file for Excel 2003 / Excel 2007 compatibility, this separates the output data file into multiple files every time the number of records in the file reaches the selected limit. If no limit is reached only one file is produced under the specified filename. However if the limit is reached then the 1st file is the same as that specified originally, the files after this contain the original filename, however they are numbered numerically.

## DATA FILTERING

In the situation where too much data has been collected, then the data can be exported with a filter. This filter provides "nth record selection" whereby every 2nd or 3rd ... nth record can be selected for the output data. To do this select "Apply Filtering" as shown on the right hand side of the window in Figure 61, and also put the desired value into the box showing "n =". Note this filter doesn't take into account the chronological time of the results.

## EXPORT DIRECTLY TO EXCEL

Note: This function is only compatible with Excel 2007. To begin the export process, press the button, this causes Microsoft Excel to open, all the data from the table is automatically transferred into Excel ready for the end user to work with.

## HIGHLIGHTING DATA

Data can be selected for printing, or ready to be copied. To make a selection press and hold the left mouse button over the first record you wish to select. Then drag the mouse over the range of data to be selected. Now release the left mouse button. This selection can either be printed or copied to the Windows™ clipboard.

## COPYING DATA FROM THE TABLE

Firstly follow the instructions for "Highlighting Data" above. Now press and hold the "CTRL" button on the keyboard and press the C button (CTRL + C). Immediately the data is stored in the computer's memory and can be pasted into many different programs.

To paste the data once it has been copied launch the target application, start a new or edit an existing document. Press and hold the "CTRL" button at the same time press the "V" button. Or find a button called "Paste".

## GRAPHING

The graphing feature of the software allows the plotting of up to two sensors at the same time, between two dates, or in real-time showing the last hour of operation.

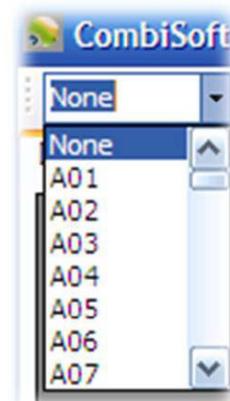


FIGURE 62 - SENSOR SELECTION

## REAL-TIME

To view graph data in real-time begin logging, (see Start Logging on page 22) then using the "CombiSoft Viewer" select the sensor to be plotted using the drop-down menu (as shown in Figure 62). The list shows a range of sensors from "A01" ... "A64", "D01" ... "D16" where A = Addressable and D = Direct. Then press the button, the display will instantly change to show a graph of real-time data, and is automatically updated every few seconds. There is also the option to watch the "realtime last hour" which will constantly show the last hour of readings, moving along with time by pressing the button.

## PLOTTING SELECT DATA

To produce a graph showing a select range of data, alter the value of the "Data Range" control at the bottom of the screen (shown in Figure 63) specifying a "From" date and time and a "To" date and time. Then press the button to produce the graph.



FIGURE 63 - DATE SELECTION

## PLOTTING TWO SENSORS

To add a second sensor to the graph, simply use the second drop-down list and select the desired sensor. The same date / time restrictions apply for both curves. Notice the drop-down boxes are colour coded to match the colour of the curves.

## PLOTTING THE DIFFERENCE CURVE

Provided that there are already 2 curves on the graph, checking the "Show Difference" tick box will add a 3rd curve to the display showing the interpolated difference between the curves.



FIGURE 64 - PLOTTING THE DIFFERENCE

This is shown in Figure 64 and can be done with either real-time and / or selected data.

## ZERO ON AXIS

The checkbox labelled "Show Zero on Axis" specifies if the zero line must be included in the graph, disabling this, changes the scale to ~10% above and below the data range already plotted.

## ZOOMING / PANNING

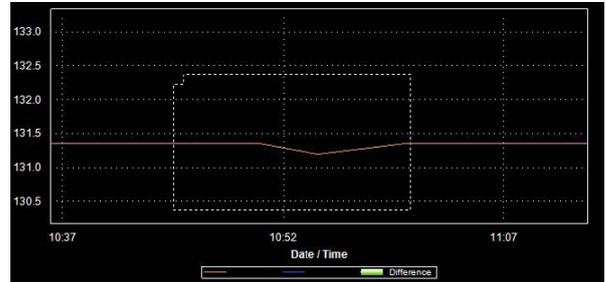


FIGURE 65 - ZOOMING

To zoom into a point within the graph, press and hold the left mouse button and draw a box around the desired area, this process is shown in Figure 65.

## GRAPH PRINTING

The graph can be printed by pressing the (Print) button. This displays a print settings window, select a suitable printer and choose your print settings then press "Print" to begin the printing process.

## COPY IMAGE

The graph can be quickly transported to other applications such as word processors and spreadsheets as an image. This can be done using a "copy and paste" process. Simply press the (Copy) button this stores the image of the graph in memory. The access the program you wish to insert the image into and press the "paste" button, or hold down the "CTRL" button and at the same time press "V".

## SAVING IMAGE

It is possible to save the graph being viewed as an image file on your PC so that it can be edited, viewed or inserted into a document. The image can be saved in the formats (JPEG, PNG, BMP, GIF, EMF and TIF) for most users JPEG or GIF are most suitable.

To save an image press the (Save) button, alternatively right-click on the graph area and select "Save Image As". You will be presented with a standard Windows™ save file dialogue window, choose a location and name to save the image and press the "Save" button.

## PLOTTING DATA WITHOUT LOGGING

Data can be plotted on the graph if it was previously collected without the need to start the data logging process.

## ERASING RECORDED DATA FOR AN INDIVIDUAL SENSOR

All the data from an individual sensor can be erased. Once erased this data cannot be recovered. Only one sensor can be erased at a time in this way. To erase data from a sensor follow the instructions found under Viewing Sensors on page 24. Once the virtual sensor is open click on the button marked ">" to open the sensors configuration, this is shown in Figure 34 found on page 24. A window similar to the one shown in Figure 41 on page 28 should now be displayed. To erase all the data, tick the tick box labelled "Confirm" and then press the "Erase" button. All the data held for the selected sensor is instantly erased.

Note when erasing the data it is best to stop any active logging beforehand. To do this follow the instructions found under Stop Logging on page 41.

## ERASING RECORDED DATA FOR ALL SENSORS

All sensor data can be erased at once. To do this enter the Panel Settings see "Configuring the Combi Front Panel" on page 16. Then select the button labelled "Erase All Recorded Data", this will reveal a new window with no buttons. To erase the all data enter the PIN number found in this manual, provided the correct number is entered the erase process will begin. This could take some time so please be patient. The pin can be found under "Erase Database PIN number" below

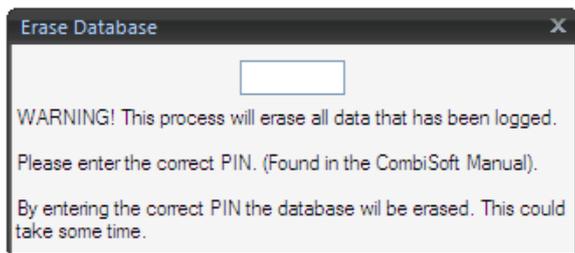


FIGURE 66 - ENTERING THE ERASE PIN

## ERASE DATABASE PIN NUMBER

The pin number to erase the database cannot be changed. It must be entered correctly in order to erase the database.

**PIN = 2401**

## Appendix

### 1. IMPORTANT NOTES

#### 1.1 24 HOUR MONITORING

Where the software is used for 24 hour monitoring and data logging, procedures should be put in place to allow the following: Restart of PC or machine that is running the software at least every 48 hours. With at least 10 minutes cool down period.

#### 1.2 TIME AND DATE SETTING

This software synchronises the time and date on the Combi system with the PC every time the software is connected. This is important to ensure the data recorded has an accurate timestamp. Ensure the system clock on the target machine is correct and accurate.

#### 1.3 SAMPLE RATES

When setting the sample rate in a large system note that a fast sample rate (< 20 seconds) may not be achievable. In this situation a sample is taken as often as possible. This is only apparent when viewing the collected data. Also please note that data logging ceases when the menu on the panel is accessed which breaks the connection to the software and an alert will appear onscreen.

#### 1.4 REDUCING CPU LOAD

In order to reduce the load on the CPU and increase the efficiency of the PC, during long periods of logging do not leave the program on the graph plotting screen especially if the data range is set to continue in real time indefinitely. This is because the plotting process generates a high demand on the systems CPU and also RAM depending on the range of data being shown. It is recommended the system is left on the "Home" tab when data logging is taking place and it is not necessary to view the data in a graph form. Clicking on the "Home" tab pauses any processing involved with plotting a graph.

#### 1.5 ALARMS AND FAULTS

During an alarm or fault condition the communication efficiency between the PC and the Combi can be reduced. It is important to try and resolve fault and alarm conditions as soon as is possible to combat this effect. For more information please refer to the Combi manual.

#### 1.6 FOR THOSE WHO HAVE USED VERSIONS LESS THAN V1.11

Users that have used older versions (below 1.11) should pay particular attention to the following sections of this document.

- Running the Application on page 11
- Minimising the CombiSoft Application on page 13
- CombiSoft Viewer – Data Extraction (Plot, Table, Export) on page 23.
- Data Acquisition Specifications on page 4

It may also be worth checking Calibrating a sensor on page 31 as the process has been improved.

## Contact

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