

Gasmaster PC Software Instructions



Contents

<u>1</u>	<u>INTRODUCTION.....</u>	<u>2</u>
<u>2</u>	<u>INITIAL CONFIGURATION.....</u>	<u>2</u>
2.1	AUTO SYSTEM CONFIGURATION	3
<u>3</u>	<u>SYSTEM CONFIGURATION.....</u>	<u>5</u>
3.1	MANUAL SYSTEM SCAN	6
3.2	MANUAL PORT SCAN.....	6
3.3	ADD MODBUS ADDRESS	6
3.4	REMOVE ADDRESS	7
<u>4</u>	<u>INSTRUMENT MIMIC DISPLAY</u>	<u>7</u>
<u>5</u>	<u>INSTRUMENT CONFIGURATION.....</u>	<u>8</u>
5.1	TOOLBAR	8
5.2	CONFIGURATION SCREEN	13
<u>6</u>	<u>EVENT LOG VIEWER.....</u>	<u>16</u>
6.1	TOOLBAR	16
6.2	WORK AREA	17
<u>7</u>	<u>CALIBRATION.....</u>	<u>17</u>
<u>8</u>	<u>THE FILE SCREEN.....</u>	<u>19</u>
8.1	TOOLBAR.....	19
<u>9</u>	<u>THE OPTIONS SCREEN.....</u>	<u>20</u>

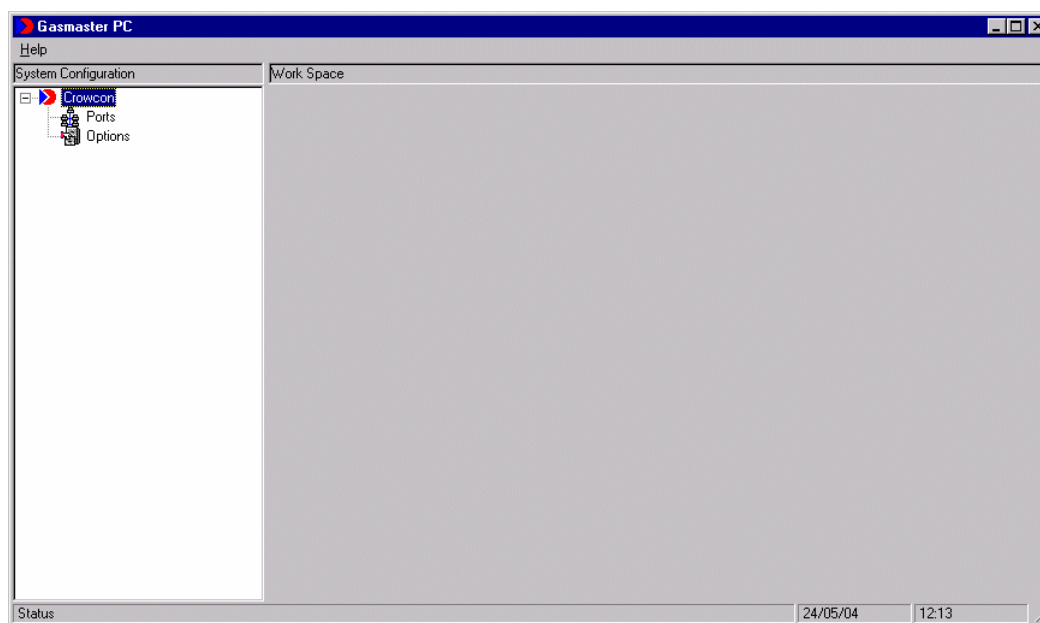
1 Introduction

This manual provides guidance for use of Gasmaster PC software. To install Gasmaster PC insert the disk into the CD drive of your PC; the software should begin the installation process automatically. Follow the instruction shown and re-start your PC when the installation sequence is complete.

To enable configuration of Gasmaster panels, connection to a PC can be made using a serial cable and RS-485 to RS-232 converter (Crowcon part number C01929). A communications port is fitted to Gasmaster as an option to allow simple connection. If the Gasmaster panel does not have a communications port fitted, a serial cable can be connected to the 'RS485 TERM' terminals on the terminal PCB fitted inside the unit.

2 Initial configuration

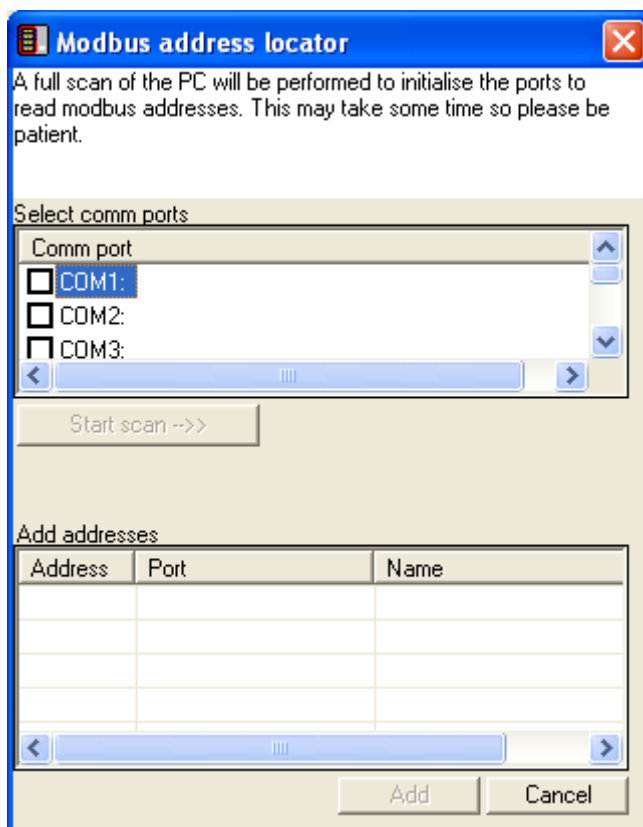
Upon initial installation, no configuration data will be available. If Gasmaster PC is run with no Gasmaster connected the display screen would resemble the image shown below.



To allow the system to be initialised, an auto system configuration sequence is started. This takes the form of a Modbus address locator which will search for any Gasmaster units connected to the PC.

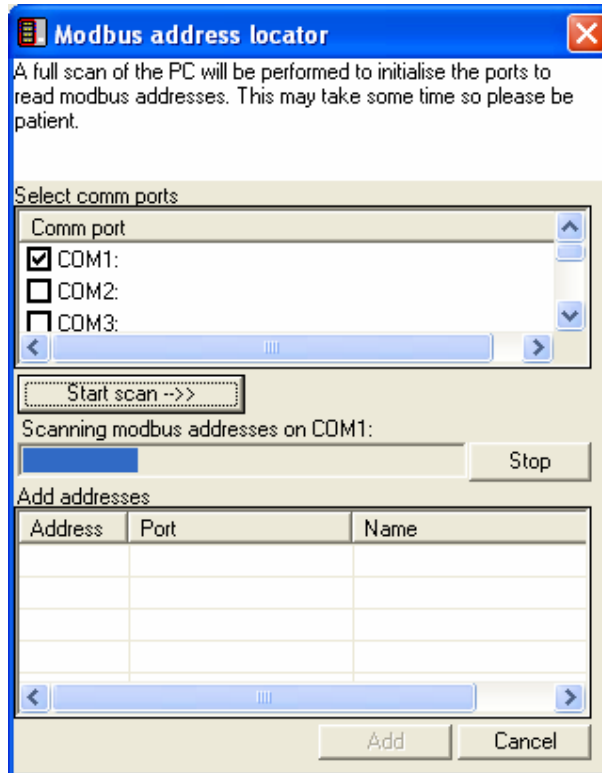
2.1 Auto System Configuration

Auto system configuration is performed only when the Gasmaster PC application cannot find configuration information on the PC on which it is being run. On start-up, the application will check for the configuration of a system and if not found, automatically begins a system scan to configure Gasmaster PC according to Gasmaster panels connected to the PC. This configuration takes the form of a screen that enables the user to scan the system for attached instruments.



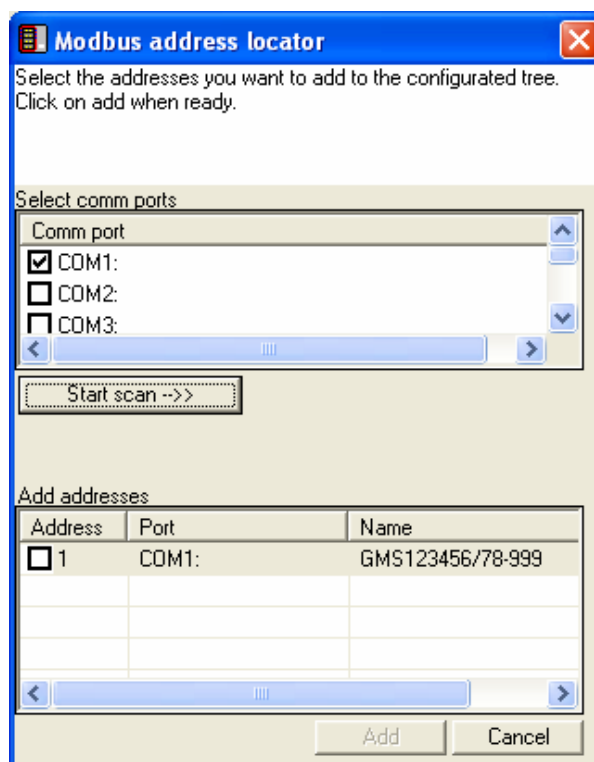
The Com port list will show all free ports detected on the PC. Click to select the appropriate Comm port (ie the port to which the Gasmaster is connected) and click 'Start Scan' to begin the scanning process. When one or more Comm ports are selected, then the 'Start Scan →' button will become active.

This action will begin the scan process and show a progress indicator as shown on the next page.



The user is given the ability to cancel the operation on a per port basis. This allows the user to shorten the time spent on the address scan if they know that all addresses reside within a specific range.

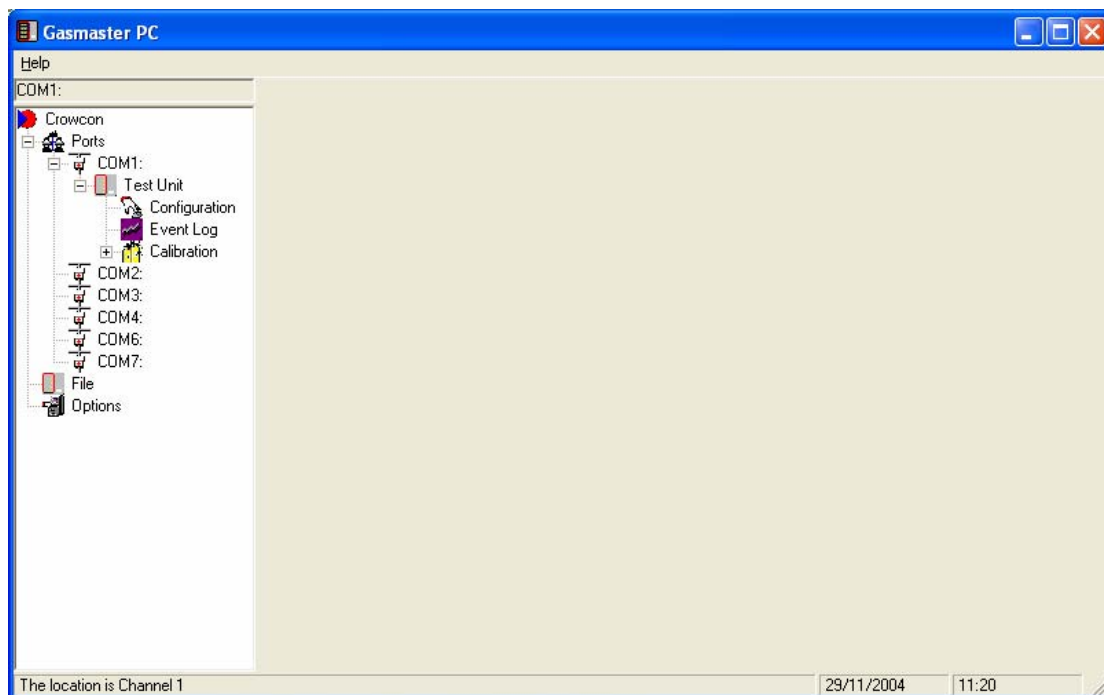
On Completion of the scan, the locator screen will be updated to show all instruments found within the addresses scanned by the Modbus Locator. These will be shown in a list of addresses that are selectable by the user (see below).



At this point, the user may select a particular Gasmaster to connect to by clicking the appropriate box in the Address list and then clicking Add. Alternatively the user may re-scan the system using the start scan button. On selecting an item in the Address list, the 'Add' button becomes active. After a short period the screen will change as shown in Section 3 below.

3 System Configuration

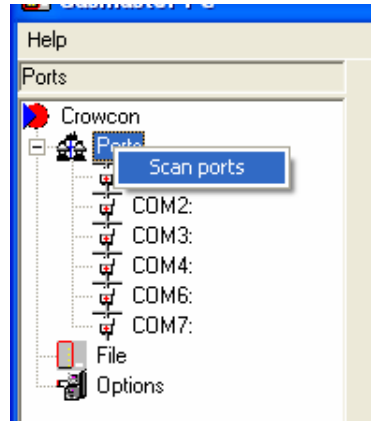
After adding a Gasmaster as described in the previous section, or when running the software at any time other than the initial run, a previously saved configuration will be loaded into the Gasmaster PC Tree. To connect to a Gasmaster panel simply click the relevant icon; the 'customer ident' will be the system name saved on the Gasmaster unit (Test Unit in this example).



The configuration will be loaded from the saved data and items checked to ascertain that they still exist on the system. Each configured Comm port will be checked to verify whether the Comm port still exists on the system, and each configured Modbus address will be checked to locate an instrument at that address. If either the Comm port or Modbus Address does not exist, then the items are simply not shown in the tree. In the event that this fails to provide a valid instrument on the system, then a dialog will be shown to the user informing them of this fact, and the user must perform a manual system scan to refresh the system.

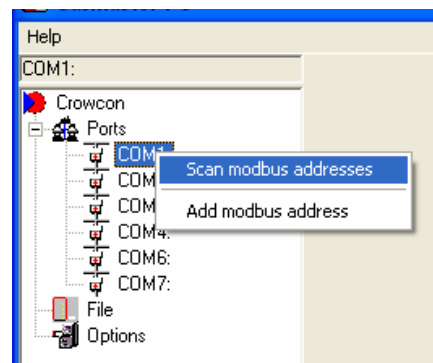
3.1 Manual System Scan

If no Comm ports are listed, the PC system can be scanned to detect available ports. Right clicking on the tree port node with the mouse and selecting the scan port item performs this task.



3.2 Manual Port Scan

The manual tree configuration also allows the user to re-scan a specified port by right clicking with the mouse to access the port menu. Each Gasmaster panel has a Modbus 'node' address, and it is this address which is searched for by Gasmaster PC. The default address set by Crowcon during manufacture is 1.



Selecting the scan Modbus addresses item will re-scan the whole of the selected port for connected Gasmaster units.

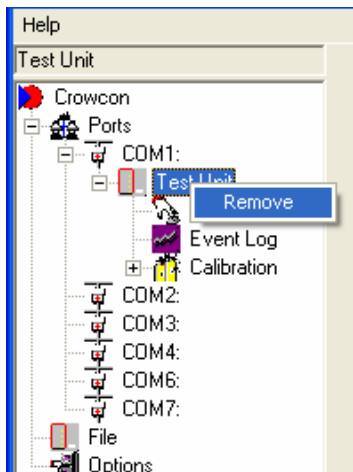
3.3 Add Modbus Address

The user is also able to add a single specified address on the port if required. This enables the user to enter the specific address of a Gasmaster unit without scanning the port. Selecting 'Add Modbus address' will display an input box that accepts numeric input in the range of 1 to 247. Entering an address will cause the application to check the validity of the specified address (i.e. by checking that a Gasmaster with the address is connected), and if valid, will add the address to the tree.

Specifying an address for which no Gasmaster is connected will prompt the following message to be displayed “Could not find instrument at specified address”.

3.4 Remove address

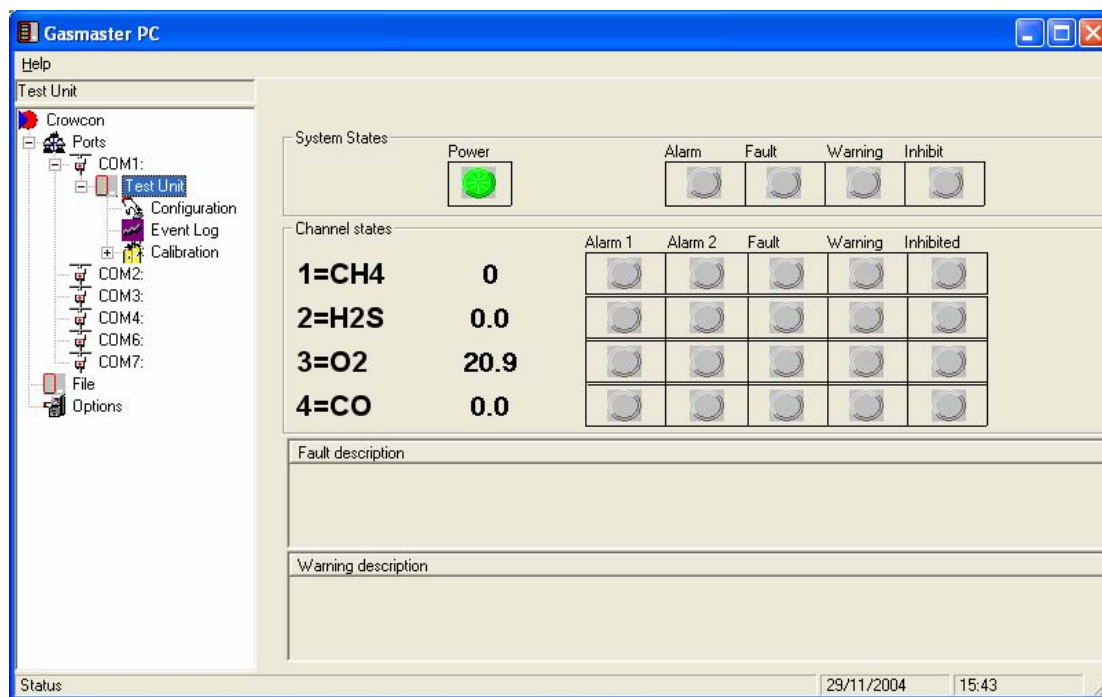
Right clicking with the mouse on an instrument node will present the user with the remove menu item.



Selecting the remove item will show the user a confirmation dialog, and on accepting, will remove the instrument from the tree.

4 Instrument Mimic Display

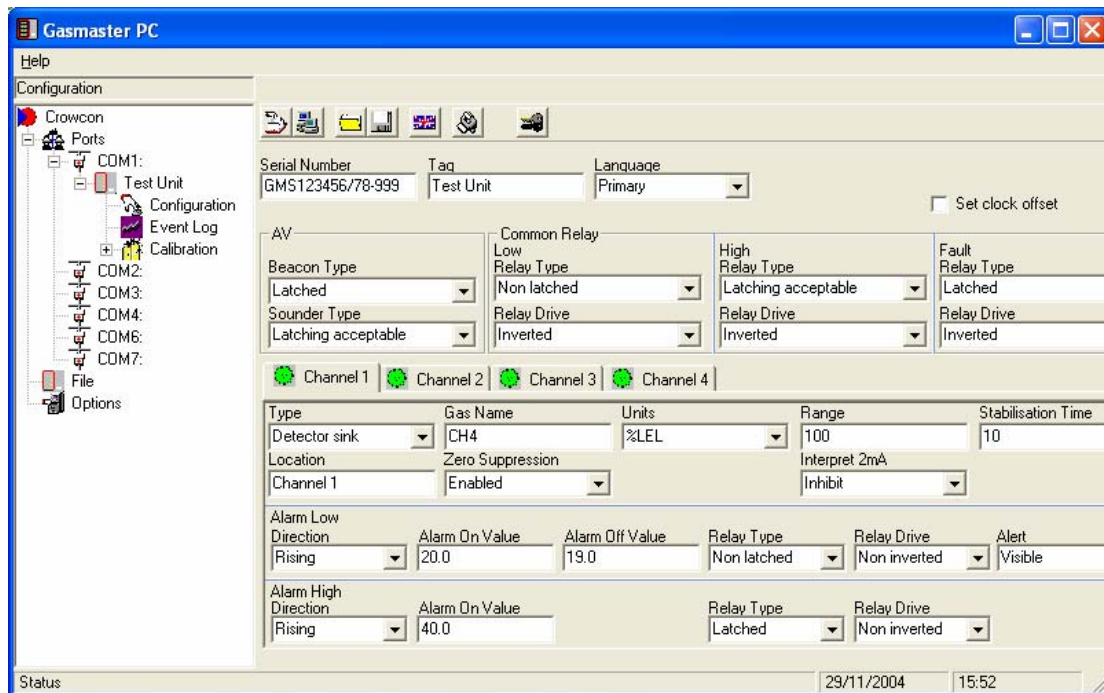
Selecting a Gasmaster panel using the icon on the tree will display a ‘mimic’ which represents the current operating state of the unit. Information on this screen is constantly updated and any new alarms and faults will be shown as they occur.



Details of any system faults or warnings will be shown in the appropriate dialogue boxes. Alarm, fault, warning and inhibit icons will light automatically should the status of any input channel change.

5 Instrument Configuration

Selecting Configuration on an instrument node in the tree will load the configuration from the Gasmaster unit and display details as shown below.



The configuration screen allows the user to load a configuration file, edit the configuration, and write the configuration to the instrument. Major functionality is performed through the toolbar located at the top of the work area.

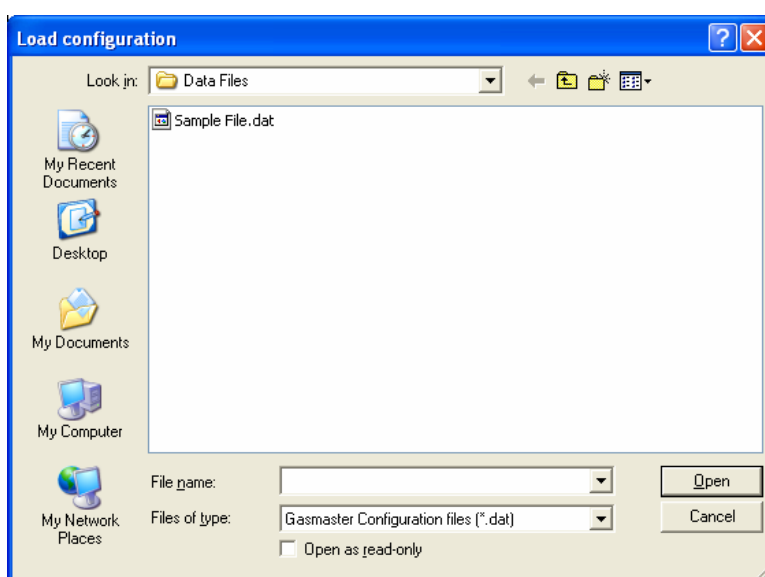
5.1 Toolbar

The toolbar allows the user to perform major functionality through a single mouse click.



The buttons from left to right consist of Read from Instrument, Write to instrument, Load from File, Save to File, Load Language, Print Configuration, and Set Supervisor Password.

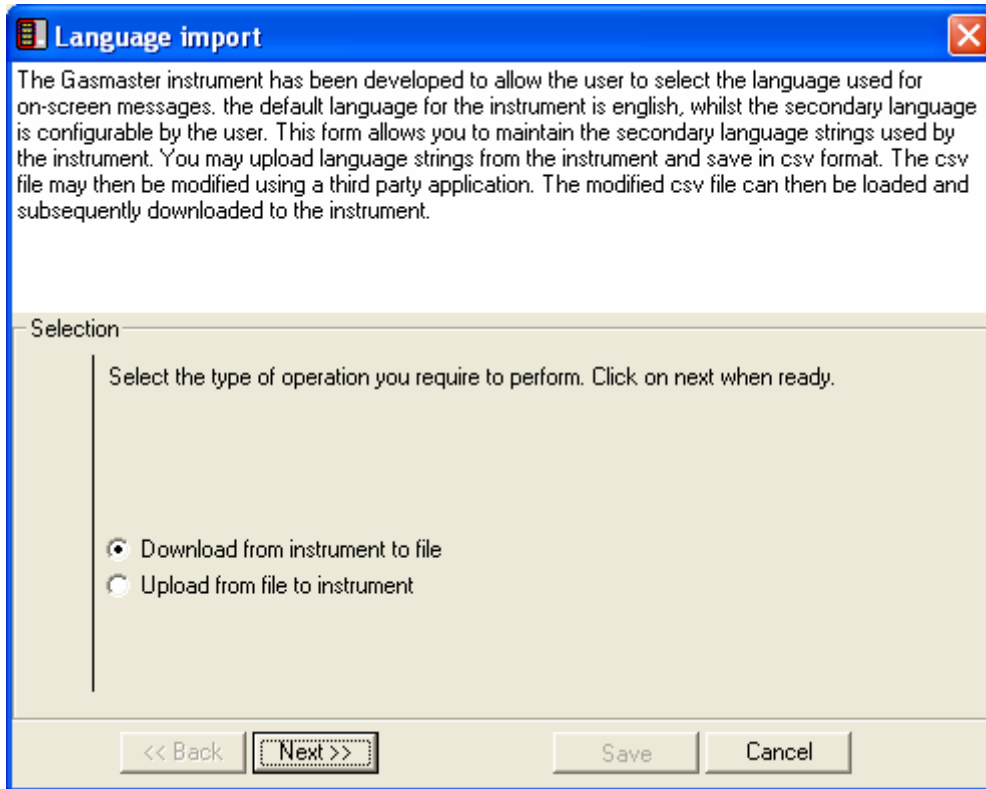
- **Read from instrument**
Selecting this button will allow the user to read from the selected Gasmaster. A message box will be shown to the user informing them that the current configuration will be overwritten, and asking if they want to continue or not.
- **Write to instrument**
Selecting this button will allow the user to change the Gasmaster settings by writing the configuration shown on screen to the instrument. This function is password protected. The user must enter the correct supervisor password to write to the instrument. If the password is entered correctly, then the password will not be required again whilst the user remains in the configuration screen. The default password is GASMASTER.
- **Load from File**
Selecting the load from file button will display the following screen:



This function enables the user to search for configuration files stored on the PC, ready for modification and/or downloading to the connected Gasmaster unit.

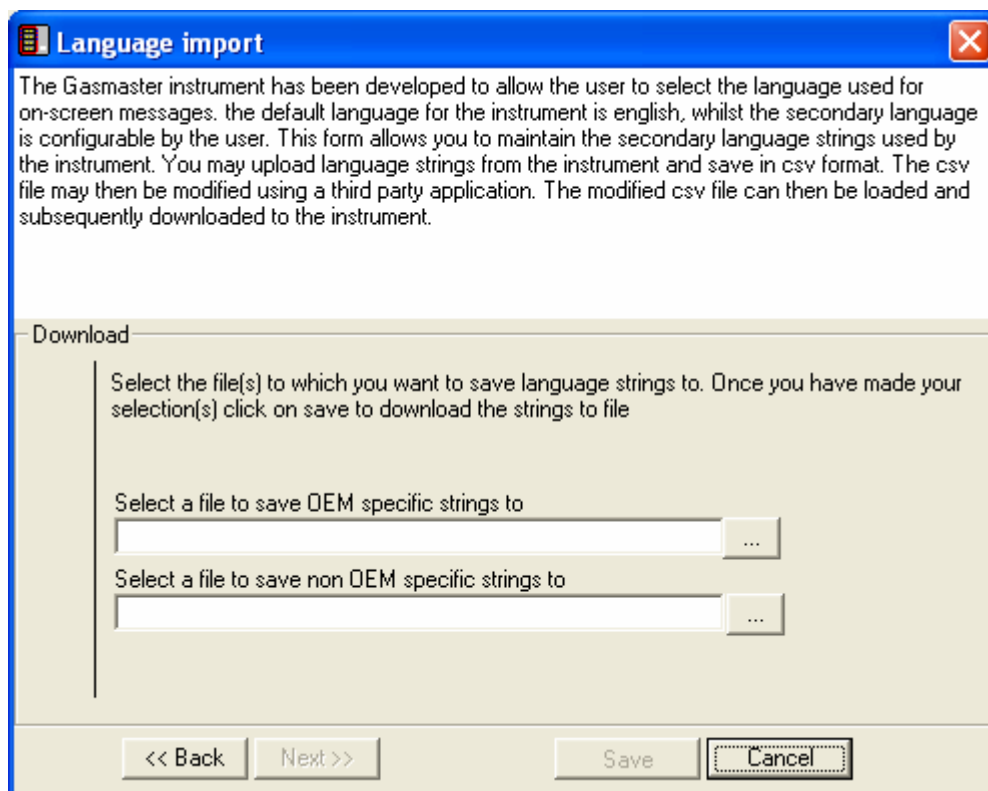
- **Save to File**
Selecting the save to file button will present the user with a dialog to enter a file name to save as, with full system browse capabilities to allow saving of a file in a folder of the users choice. The dialog will default to a folder specified in the options screen that is user customisable.
- **Load language**
All Gasmaster units display information in English, but can have an alternative language loaded which will become the default language used for the display. Selecting the 'load language' button will present the user with a wizard dialog to allow then to save language strings to file, and load languages from file.

Navigation through the wizard is performed by the Next and Back buttons. The initial provides a choice of loading the language file from the Gasmaster or from a file.



Download from instrument to file

Selecting the download from instrument to file option, and clicking on the next button will move the wizard to the following screen:



There are two fields available:

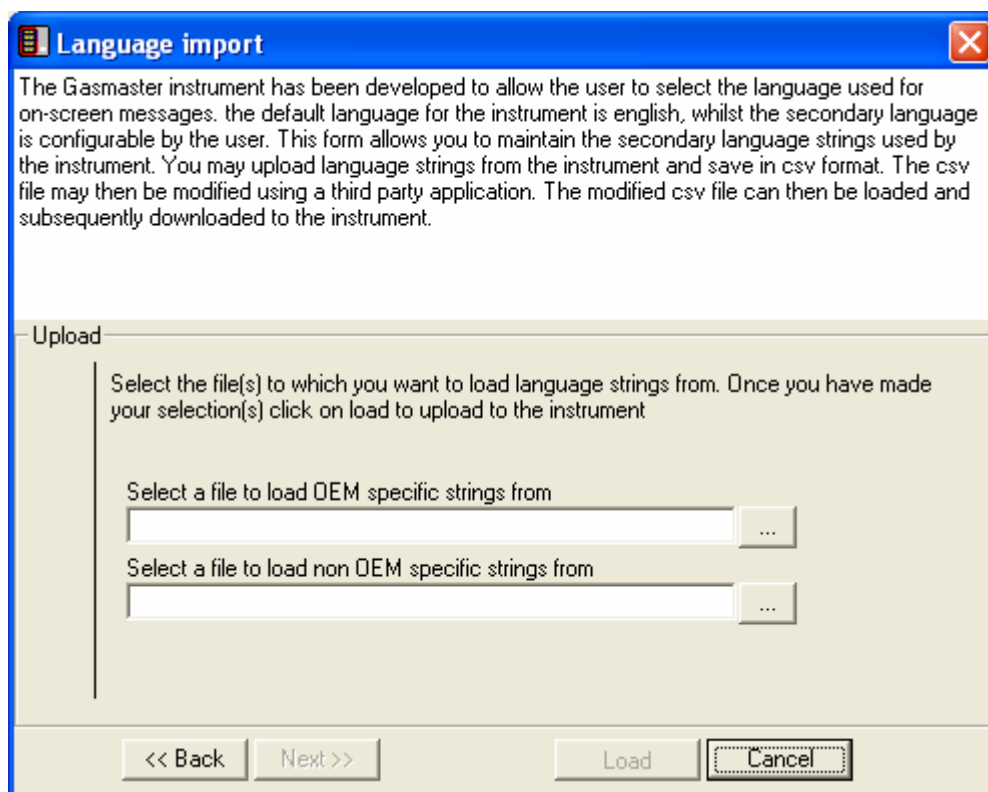
‘Select a file to save OEM specific strings to’: this will retrieve the distributor details from the Gasmaster as shown when the unit is powered-up and when the Gasmaster ‘Back’ button is pressed on the normal operating screen. Standard units will display “Service/Support: Crowcon +44 (0)1235 557700”. The data will then be stored in the selected folder on the PC.

‘Select a file to save non OEM specific strings to’: this will retrieve the general second language display files from the Gasmaster and store them in the selected folder on the PC.


Once one of the above options is selected, the back button becomes enabled, whilst the next button becomes disabled, the user may either manually enter a filename, or use either of the select buttons to open a file browser to select a file. Selecting an existing file will prompt the user to confirm a file-overwrite. Once either of the filename fields has data entered, the save button becomes enabled. Clearing the filename fields will disable the save button. Clicking on Save when enabled will write the language strings to the named file(s). Clicking back at a point prior to the save will return the user to the function selection screen.

Upload from file to instrument

Selecting the upload from file to instrument option, and clicking on the next button will move the wizard to the upload screen.



This enables PC language files to be downloaded to a Gasmaster. There are two fields available:

‘Select a file to load OEM specific strings from’: this will load a ‘.csv’ file from the PC containing local distributor details which can be downloaded to the Gasmaster for display when the unit is powered-up and when the Gasmaster  ‘Back’ button is pressed on the normal operating screen. Standard units will display “Service/Support: Crowcon +44 (0)1235 557700”.

‘Select a file to load non OEM specific strings from’: this will load a ‘.csv’ file from the PC containing the translated Gasmaster display strings, and download them to the Gasmaster.

Files can be written to the Gasmaster by clicking ‘Load’ once the file-paths described above have been entered. A password will be requested at this point; the default password is ‘linguist’.

To enable the secondary (translated) language to be displayed on the Gasmaster select the ‘Secondary’ option in the ‘Language’ field on the configuration display (see section 5.2 for details).

- **Print Configuration**

Selecting the Print Configuration button will send the current configuration to a printer in a pre-set format. The printed specification uses information contained in a file called ‘Printer.txt’. *If this file is not present an incomplete certificate will be printed.* The file is located in the folder

‘Documents and Settings\All Users\GasmasterII\Certificates’

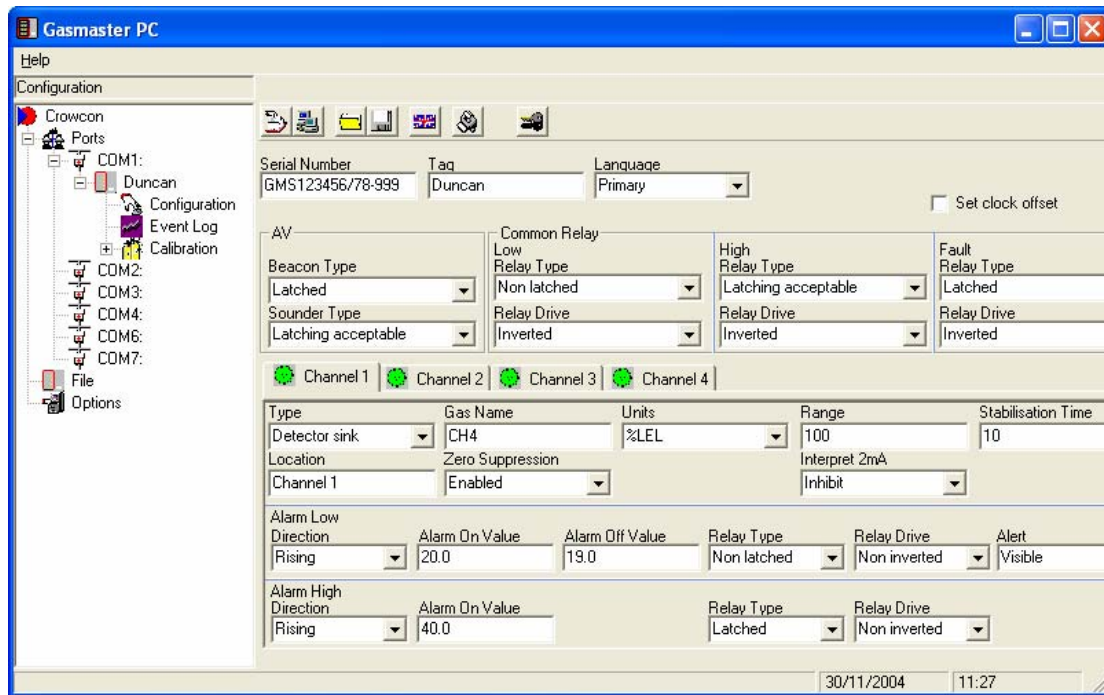
- **Change supervisor password**



This function allows the Gasmaster PC supervisor password (required to download configuration changes to the Gasmaster) unit to be changed. The default password is *GASMASTER*. To change the password, enter the current password in the top field, and the new password in the middle and lower fields. Press OK to confirm the change.

5.2 Configuration Screen

The configuration screen allows the user to change the configuration of the connected Gasmaster.



Note: the following terms are used to describe options for audible/visual alarms and alarm/fault relays:

Latched means that in an alarm state, the output will stay active when the Accept/Reset key is pressed, and will only reset when the alarm or fault has cleared and the Accept/Reset key is pressed again.

Non-latched means that in an alarm state, the output will stay active when the Accept/Reset key is pressed, but will reset automatically when the alarm has cleared.

Latching acceptable means that in an alarm state the relay will reset when the Accept/Reset key is pressed (even if the hazard is still present).

Non-inverted means that a relay coil is not energised in a non-alarm state (normally de-energised).

Inverted means that a relay coil is energised in a non-alarm state (normally energised or 'fail-safe')

A description of the function of each field follows:

System Fields:

- **Serial Number**
This is a sixteen-character field that holds the serial number of the connected Gasmaster instrument. It cannot be changed using this software.
- **Tag**
A sixteen character field that shows a system name specified by the user. The default name is 'Customer Ident', but this can be changed if required. This name is shown when the Gasmaster is powered-up and when the Gasmaster ⏪ 'Back'

button is pressed on the normal operating screen. It is also the name shown on the Gasmaster PC tree and enables Gasmaster units that are connected together using the RS-485 Modbus function to be identified individually.

- **Language**
Select the language to be shown on the Gasmaster display; either *Primary* (always English), or *Secondary*: an alternative language which can be loaded as described in section 5.1.
- **Set clock offset**
This function is used to enhance the accuracy of the time attributed to logged events. When checked, the software will write a time period in milli-seconds to the Gasmaster to compensate for small changes in PC clock accuracy. Gasmaster does not contain a real-time clock, and calculates events according to the time set on the PC used for uploading the event-log. The actual offset period is set in the Options section of this software (see Section 9).
- **Beacon Type**
Sets the operation of the beacon drive from the 'A/V Drive' terminals. Options are: *Non-latched, Latched*.
- **Sounder Type**
Sets the operation of the sounder drive from the 'A/V Drive' terminals. Options are: *Non-latched, Latched, Latching acceptable*
- **Relay Type/Relay Drive**
Determines the operation of the common low alarm, high alarm and fault relays. Options are: *Non-latched, Latched, Latching acceptable, Non inverted, Inverted*.

Input Channel Fields:

A tab is shown for each of the four input channels, and the following commands are identical for each tab. Gasmaster 1 will only have one tab.

- **Type**
A drop-down list to specify the type of detector connected to the channel. Options are:*Unused*: all other fields on the tab will disappear.
Detector Source: 4-20mA current source detector.
Detector Sink: 4-20mA current sink detector.
Fire Source: 4-20mA current source flame detector.
Fire Sink: 4-20mA current sink flame detector.
Conventional Fire: smoke/heat detector loop, manual call points.
ESU sink: where the Gasmaster channel is to monitor the fan of a Crowcon Environmental Sampling Unit.
The fields shown on the input channel tab will change according to the Type selected.
- **Gas name**
A sixteen-character field that holds the gas name specified by the user. Only the first 4 characters of this field are shown on the instrument display. Example: Methane= CH4, Oxygen= O2, Carbon Monoxide= CO, Hydrogen Sulphide= H2S
- **Units**
A drop-down list to indicate the range shown on the Gasmaster display. Options are *None, Fire, PPB, PPM, %LEL, and %VOL*
- **Range**
A numeric value representing the range of the input channel. Value should be between 1 and 9999. If the range specified by the user is lower than any of the

alarm on or off values, then a message is shown to the user informing them of that fact and the range is reset to the previous valid value.

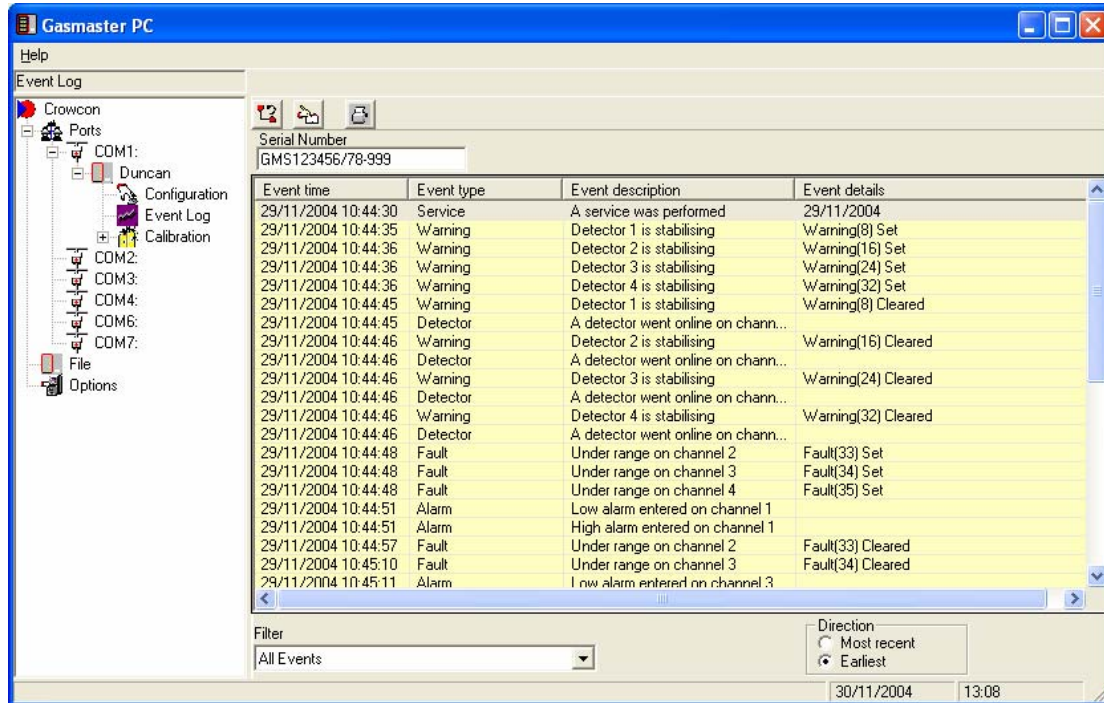
- **Stabilisation Time**
A numeric value representing the stabilisation time in seconds for the detector. The detector input signal will be inhibited for this period after power-up. Upper limit is 120 seconds.
- **Reset Time**
Shown on conventional fire channels only, *Reset Time* sets the number of seconds that power is removed from conventional smoke/heat detectors when Accept/Reset is pressed.
- **Location**
A sixteen-character field for the detector location or name specified by the user. This name will be shown on the Gasmaster display when an alarm activates.
- **Zero Suppression**
A drop-down list to denote the state of Zero Suppression for an input channel. Permitted values are *Disabled* or *Enabled*.
- **Interpret 2mA**
A drop-down list to denote the function of the input channel when a 2mA signal is received from the detector. Options are: *Fault*, *Warning*, or *Inhibit*

Alarms:

- **Direction**
A drop-down list to denote whether an alarm is rising or not. Options are *Rising* and *Falling*.
- **Alarm On Value**
A numeric value to denote the level at which an alarm is activated. Level must be within the detector range specified.
- **Alarm Off value**
A numeric value to denote the level at which an alarm is deactivated. Available from Level 1 alarms only.
- **Relay Type**
Determines the operation of the channel low alarm and high alarm relays. Options are: *Non-latched*, *Latched*, *Latching acceptable*.
- **Relay Drive**
Determines the operation of the channel low alarm and high alarm relays. Options are: *Non inverted*, *Inverted*.
- **Alert**
Determines whether Level 1 alarms activate the internal sounder, alarm LED's and audible/visual alarm drives. If *Hidden* is selected, a Level 1 alarm will activate the relay and its dedicated display icon only. Options are: *Visible* or *Hidden*.

6 Event Log Viewer

Selecting Event Log on an instrument node in the tree will load the Event Log screen into the work area of the Gasmaster PC application



Initially the event list will be blank. The Even Log screen allows the user to load the event log from the current instrument for viewing, printing storing.

6.1 Toolbar

The toolbar allows the user to perform major functionality through a single mouse click.



The buttons from left to right consist of Upload From Instrument, Save to CSV file, and Print.

- Upload From Instrument**
 Selecting the Upload log button will read the current log from the connected Gasmaster and display it on-screen.
- Save to CSV file**
 Selecting the Save to CSV button will present the user with a file save dialog for entry of a file name to save the log to. The file save dialog will default to a folder that is customisable by the user in the options screen. Writing to a file that already exists will display a confirmation dialog asking the user to confirm the file overwrite operation. The CSV file can then be utilised in Excel for logging purposes.

- **Print**
Selecting the print log button will send the currently loaded log to a printer

6.2 Work Area

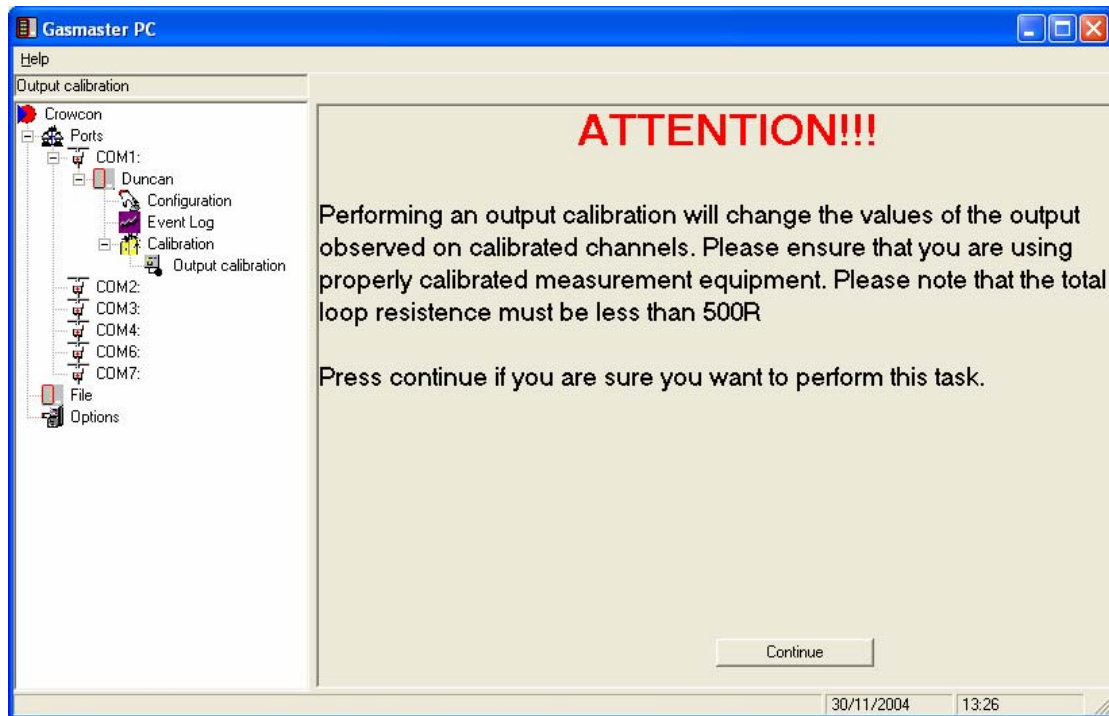
The Event log screen allows the user to modify the current view of the loaded event log. An explanation of each field follows:

- **Serial Number**
A read only field showing the serial number of the instrument that the log is uploaded from.
- **Event Time**
The times and dates of events uploaded from the instrument. Times are calculated according to the PC time and date.
- **Event Type**
A category description of each event.
- **Event Description**
A full description of each event.
- **Event Details**
Additional information such as fault/warning codes and the maximum gas level reached by a detector.
- **Direction**
Enables the list to be sorted by either most recent or earliest events.
- **Filter**
Enables the list to be filtered to display only the following types of events: *All Events, Alarm Events, Warning Events, Power Events, Fault Events, and System Events.*

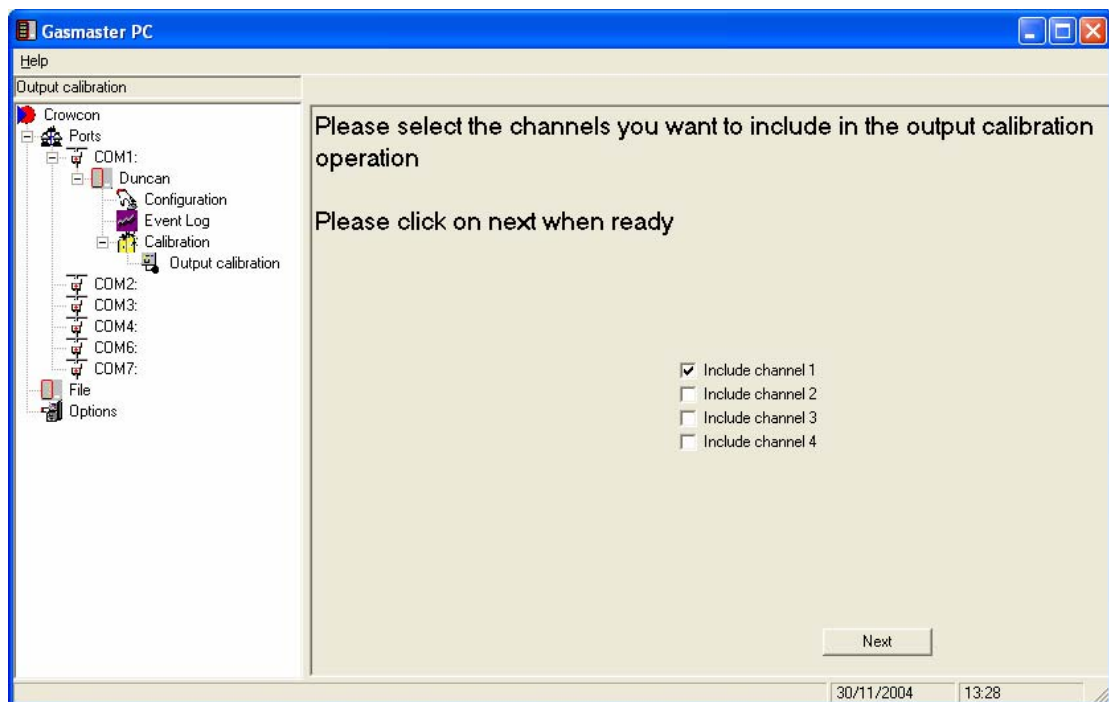
7 Calibration

The calibration option on the menu tree enables the 4-20mA outputs from Gasmaster to be adjusted. This may be necessary if the gas level display on a remote PLC/DCS does not match that shown on the Gasmaster display. The calibration window is shown on the next page.

Gasmaster PC does not allow calibration of the inputs to the connected Gasmaster. Please refer to the Installation, Operation and Maintenance Instructions supplied with the Gasmaster unit for calibration instructions.



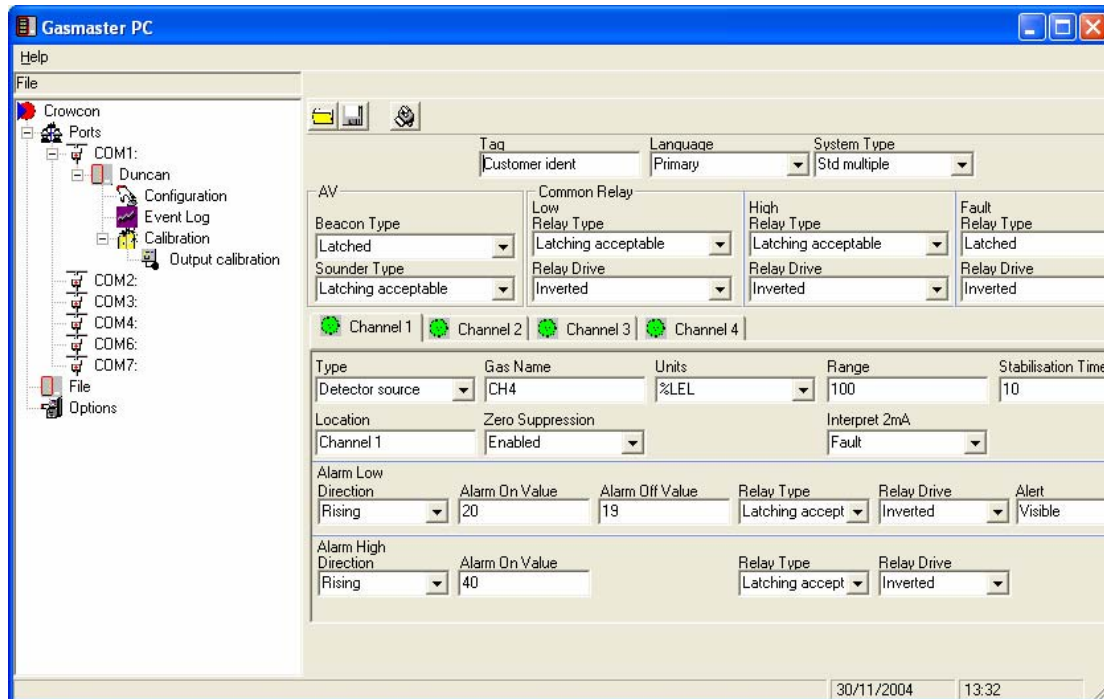
When Continue is pressed the screen will change as shown:



Select the channels to be adjusted and follow the on-screen instructions.

8 The file Screen

In order to allow the use of the software without a connection to a Gasmaster unit, a file branch has been added to the tree that mimics the functionality of the configuration screen. This screen does not allow a read from or a write to the instrument, but works on file manipulation instead.



8.1 ToolBar

The toolbar allows the user to perform major functionality through a single mouse click.



The buttons from left to right consist of Load from file, Save to file, and Print specification.

- **Load from file**

This button allows the user to load a selected file into the configuration. On selecting this button, the user will be presented with a file selection screen in which to select a file for loading. Once selected, the configuration will be populated with the selected file data.

- **Save to file**

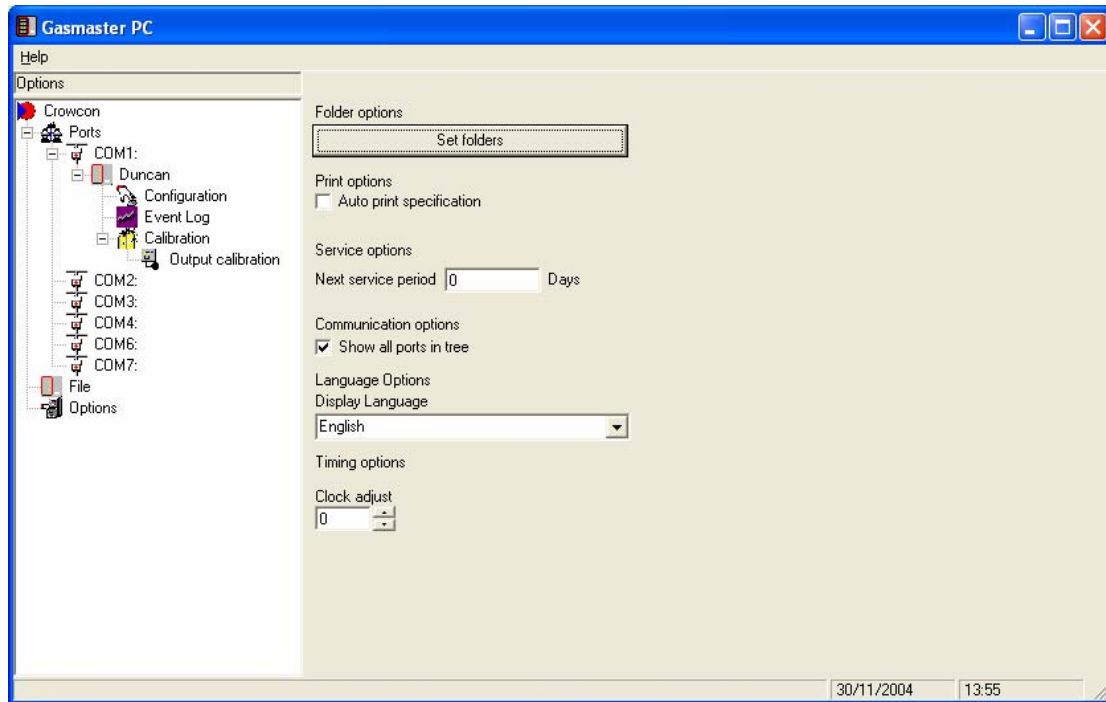
This button allows the user to load a selected file into the configuration. On selecting this button, the user will be presented with a file selection screen in which to select a file for loading. Once selected, the configuration will be populated with the selected file data.

- **Print Log**
Selecting the print log button will send the currently loaded log to a printer.

All other field are as described in Section 5.2.

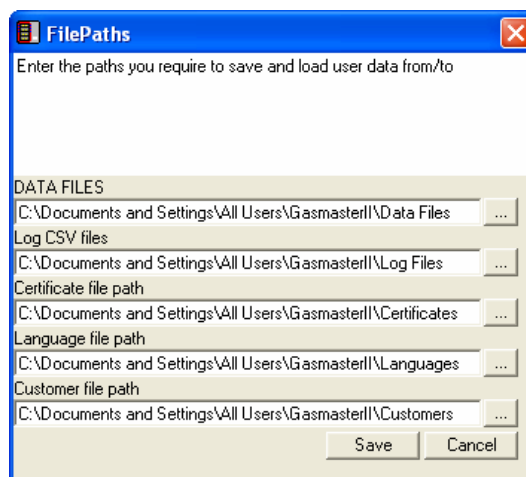
9 The Options Screen

The options screen allows the user to set application specific options.

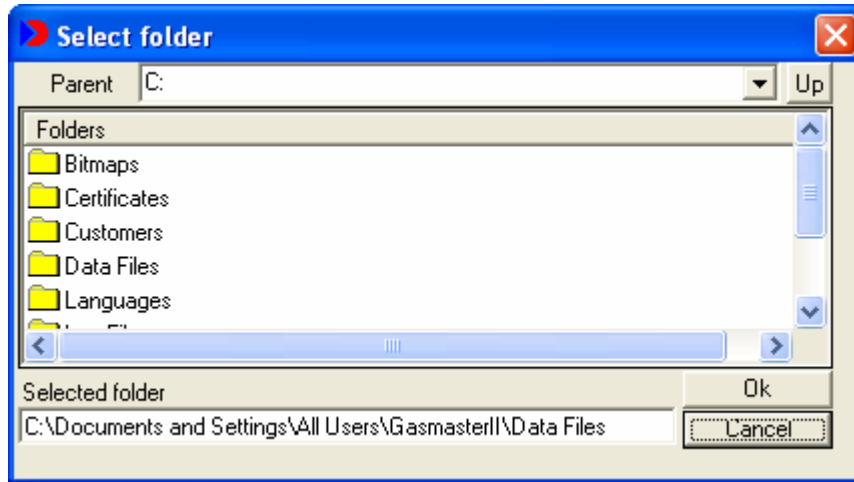


The options configurable by the user are described below:

- **Set Folders**
This allows the user to specify folders into which files are saved, or from which files are read. On selection of the button, the user will be presented with a folder selection screen.



The user may either type a path to an existing folder in the text box for a particular path, or may use the file selector button located alongside the path entry field. Selecting the folder selector button will present the user with the folder selector screen.



The folder selector screen is initialised to point to the current path for the folder being customised. Navigation is by clicking on the folder tree on a specific node. The user may change drives using the parent selector list at the top of the screen, or use the up button to move to the parent folder of the current folder. Once the user has located the folder of their choice, selecting OK will update the file path screen with the selected folder name.

- **Auto Print Specification**

This allows the user to specify whether a print of the certificate specification is automatically performed after a configuration has been written to the instrument. Checking this feature will turn auto print on, un-checking will turn auto print off.

- **Next Service Period**

This option allows the time period for the 'Calibration Due' warning to be set. After this time period specified has expired (usually 6 months) a 'calibration Due' warning will be displayed by the Gasmaster unit. The time period is a conversion of the number of days set (usually 180). This option can only be utilised on 'OEM' versions of Gasmaster PC.

- **Show All Ports In Tree**

This feature allows the user to 'hide' or 'show' ports in the tree that do not have a Modbus connection to a Gasmaster panel.

- **Display Language**

This feature allows the user to specify the language in which Gasmaster PC will run. Language lists may vary between systems as the application looks for .CSV files held in the folder:

'C:\Documents and Settings\All Users\GasmanII\Resources'

Once a user selects a language other than English, the software needs to be restarted for the language to be displayed. Contact Crowcon for a list of translations available.

- **Clock Adjust**
Offsets the running speed of the Gasmasters internal clock to compensate for small differences in PC clock speeds. Used to improve accuracy of the times and dates attributed to logged events when uploaded using Gasmaster PC. The maximum offset is +/- 100 which is equivalent to 1% change in clock speed. If changes are made, the event log time accuracy should be re-checked until the correct level of adjustment is reached.