ATAS

A Total Analytical Solution

OPTIC2
Control Software

Contents

Chapter 1. Introduction

Optic2 Control Software OCS is a utility program that controls the ATAS Optic2 Injector from a remote PC. It allows injection methods to be edited graphically, as well as in dialogue boxes.

This manual will discuss installation of both software and hardware, as well as all aspects of using OCS.

Chapter 1.1 Terminology

For a complete understanding of this manual a number of terms need to be explained.

Chapter 1.1.1 Optic2

The Optic2 is an injection system for use with gas chromatographs. It allows the temperature of the injection port to be programmed. It also has the ability to control
- carrier gas pressure and auxiliary gas pressure in the injection port.
- split and vent valves
- (expert mode only) up to 5 auxiliary digital outputs

Chapter 1.1.2 Split method

Optic2 can be used as a conventional hot split injector or for cold split injection. In virtually all cases, better results will be obtained using the cold split approach. This means starting with the injector cold, (i.e. below the boiling point of the solvent) and temperature programming the injector to a temperature usually 50°C above the maximum elution temperature of the sample. This gains the following advantages:
- Syringe needle discrimination is eliminated, thus ensuring that the fraction of the sample which enters the column is truly representative of the sample as a whole.
- The milder temperature regime experienced by the sample reduces thermal degradation (especially when lower injector programming rates are used).
- Better detection limits are obtained for late running components.
- Better run-to-run reproducibility.

The Split Method Menu is used to set the following functions and parameters:
- **Method name:** allows the user to store a customised split method under a name of the user's choice.
- **Equilibration Time:** allows the user to provide for improved temperature and pressure stability prior to Optic2 entering the "ready" state.
- **Initial Temperature:** defines the injector temperature at the start of the method run.
- **Ramp rate:** defines the rate of increase of injector temperature.
- **Final Temperature:** defines the injector temperature at the end of the temperature ramp.
- **Transfer pressure:** defines the pressure in the injector at the start of the method run. This enables the user to set the pressure which is applied to the sample to transfer it from the injector onto the column (higher pressures give a faster transfer).
- **Transfer Time:** defines the time that the transfer pressure is maintained after the start of the method run.
- **Initial Run Pressure:** defines the pressure that the carrier gas is set to after the transfer time has elapsed, this represents the inlet pressure set to use at the start of the operation.
- **Final Run Pressure:** defines the carrier gas pressure at the end of the method run.

Chapter 1.1.3 Splitless method

Optic2 can be used for conventional hot splitless injection or for the cold equivalent. In virtually all cases, better results will be obtained using the cold injection technique for identical reasons to those described at split method. The quality of results obtained should be comparable to on-column injection an all respects but with the added advantage of preventing involatile and particulate matter of from reaching the column. Consequentially, cold splitless injection is better suited to the analysis of "dirty" samples.

The Splitless Method Menu is used to set the following functions and parameters:
∗ **Method name:** allows the user to store a customised split method under a name of the user's choice.
∗ **Equilibration Time:** allows the user to provide for improved temperature and pressure stability prior to Optic2 entering the "ready" state.
∗ **Initial Temperature:** defines the injector temperature at the start of the method run.
∗ **Ramp rate:** defines the rate of increase of injector temperature.
∗ **Final Temperature:** defines the injector temperature at the end of the temperature ramp.
∗ **Splitless Time:** defines the period of time after the start of the method before the split line is opened. When setting this parameter, the time taken for the injector to reach its final temperature must be taken into account. Typically, splitless times will be longer than for a corresponding iso-thermal splitless injection by an amount relating to the rise-time of the injector temperature.
∗ **Transfer pressure:** defines the pressure in the injector at the start of the method run. This enables the user to set the pressure which is applied to the sample to transfer it from the injector onto the column (higher pressures give a faster transfer).
∗ **Transfer Time:** defines the time that the transfer pressure is maintained after the start of the method run.
∗ **Initial Run Pressure:** defines the pressure that the carrier gas is set to after the transfer time has elapsed, this represents the inlet pressure set to use at the start of the operation.
∗ **Final Run Pressure:** defines the carrier gas pressure at the end of the method run.

Chapter 1.1.4 Large Volume method

In the past, gas chromatographers have been used to injecting samples of no more than 2 µl into the GC. Since split/splitless injectors generally have an internal capacity of approximately 2 ml, and 1 µl of solvent gives rise to approximately 1 ml of vapour, the total amount of sample that can be injected into a split or splitless injector is around 2 µl.

When an injection is made into a temperature programmable injector, the evaporation of the solvent is a controllable process and therefore restrictions on the volume of solvent that can be injected are much less severe.

Optic2's large volume method is designed to implement the "Rapid" large volume technique. This enables injections up to 100µl to be made routinely and with a minimum of optimisation. The technique is compatible with most auto-samplers and is very robust, making it suitable for routine applications. Other large volume sampling techniques, such as speed programmed injection, may also be accommodated.

In large volume injection, the sample is introduced with the injector at near ambient temperature. The solvent is allowed to evaporate into the carrier stream and pass out through the split vent. At an appropriate point, the split vent is closed and the injector heated. The sample is then transferred to the column. Simple optimisation of the parameters enables components with a very wide range of volatility to be analysed by this technique.

The advantages to be gained from this method are very significant:

♦ An improvement in detection limits of up to 50 times that of conventional splitless injection.
♦ Much greater flexibility in design of sample preparation procedures.
♦ Opportunities to couple on-line with sample preparations accessories (such as automated solid phase extraction instruments).

The large volume method is used to set the following functions and parameters:

∗ **Method name:** allows the user to store a customised split method under a name of the user's choice.
∗ **Equilibration Time:** allows the user to provide for improved temperature and pressure stability prior to Optic2 entering the "ready" state.
∗ **Initial Temperature:** defines the injector temperature at the start of the method run.
∗ **Vent time:** defines the time period that the initial temperature and pressure are maintained. This period is provided for solvent elimination.
∗ **Ramp rate:** defines the rate of increase of injector temperature.
∗ **Final Temperature:** defines the injector temperature at the end of the temperature ramp.
∗ **Split Open Time:** defines the period of time after the start of the method before the split line is opened. When setting this parameter, the time taken for the injector to reach its final temperature must be taken into account. Typically, splitless times will be longer than for a corresponding iso-thermal splitless injection by an amount relating to the rise-time of the injector temperature.
∗ **Purge pressure:** defines the pressure during the Initial Time, while the solvent is eliminated through the vent line.
∗ **Transfer pressure:** defines the pressure in the injector at the start of the method run. This enables the user to set the pressure which is applied to the sample to transfer it from the injector onto the column (higher pressures give a faster transfer).
∗ **Transfer Time:** defines the time that the transfer pressure is maintained after the start of the method run.
∗ **Initial Run Pressure:** defines the pressure that the carrier gas is set to after the transfer time has elapsed, this represents the inlet pressure set to use at the start of the operation.
∗ **Final Run Pressure:** defines the carrier gas pressure at the end of the method run.

* **Solvent Monitor Threshold:** is the value used to automatically determine the solvent elimination time. This parameter sets the threshold for a sensor that monitors the presence of solvent in the split line. The sensor reading, (displayed during this phase of the run), must rise above the threshold during injection. The run starts when the reading falls back below the threshold.

Chapter 1.1.5 Desorption method

The Optic2 can be used for the thermal desorption of both solid samples and adsorption tubes. When analysing gas phase samples, the samples can be collected off-line using an Optic2 liner, packed with a suitable sorbent. Alternatively, on-line analysis is possible with the sample being introduced into the liner while it is still within the injector. The desorption method gives a sequence of operations which is designed to enable the best results to be easily obtained.

Thermal desorption using the Optic2 is distinguished from conventional thermal desorption by the way the adsorption tube is closely coupled to the column. This gives the following advantages:
♦ The analysis of very active components is possible since the opportunities for adsorptive losses are greatly reduced.
♦ The analysis of components with a very high boiling point (such as polymer additives) is possible.
♦ The very short time-cycle associated with the desorption enables results to be obtained rapidly.

The desorption method menu is used to set the following functions and parameters:
* **Method name:** allows the user to store a customised split method under a name of the user's choice.
* **Equilibration Time:** allows the user to provide for improved temperature and pressure stability prior to Optic2 entering the "ready" state.
* **Initial Temperature:** defines the injector temperature at the start of the method run.
* **Ramp rate:** defines the rate of increase of injector temperature.
* **Final Temperature:** defines the injector temperature at the end of the temperature ramp.
* **Split Valve State:** defines the state of the split valve. The options are between Split⇔Splitless⇔Vent.
* **Sample Sweep Pressure:** defines the carrier gas pressure during the time that the sample is being swept with carrier gas prior to desorption.
* **Sample Sweep Time:** defines the time that the sample is swept with carrier gas prior to desorption in order to eliminate air from the injector.
* **Desorption Pressure:** defines the carrier gas pressure applied while the sample is being desorbed. In many cases it is beneficial to desorbe the sample with desorption pressure set to zero (ie. under static flow conditions).
* **Desorption Time:** defines the time that the desorption pressure is maintained after the injector begins to heat. This will usually be about 30seconds after the injector reaches the maximum temperature.

* **Transfer pressure:** defines the pressure in the injector at the start of the method run. This enables the user to set the pressure which is applied to the sample to transfer it from the injector onto the column (higher pressures give a faster transfer).
* **Transfer Time:** defines the time that the transfer pressure is maintained after the start of the method run.
* **Initial Run Pressure:** defines the pressure that the carrier gas is set to after the transfer time has elapsed, this represents the inlet pressure set to use at the start of the operation.
* **Final Run Pressure:** defines the carrier gas pressure at the end of the method run.

Chapter 1.1.6 Expert method

The four modes of operation described above are designed to cover the most common ways in Optic2 will be used. The Expert mode is designed to cater for the many other possibilities.

In the expert mode, four ramp temperature programmes and four segment pressure profiles can be set. In addition, five external channels of time events can be programmed and the split valve can be programmed to change state up to eight times in any sequence. Pressure control of an auxiliary gas supply channel is also possible.

The Expert Method Menu is used to set the following functions and parameters:
* **Method name:** allows the user to store a customised split method under a name of the user's choice.
* **Equilibration Time:** allows the user to provide for improved temperature and pressure stability prior to Optic2 entering the "ready" state.
* **Initial Temperature:** defines the injector temperature at the start of the method run.
* **Initial Time:** defines the time period that the initial temperature and pressure are maintained. This period is provided for solvent elimination.
* **Ramp Sub-Menu:** allows the user to set individual parameters for up to four ramps. Each ramp sequence contains the same three events, *Ramp rate, ISO Temperature* and *ISO Time.*
* **Split Valve Sub-Menu:** allows the user to set individual parameters for two states of the valve, not including the initial state. Each state consists of the same two events, *Valve State* and *Valve Time*.
* **Auxiliary Control Sub-Menu:** allows the user to set individual parameters for up to five auxiliary control relays, which may be used for the control of external devices. Each relay can be programmed to act on up to eight events.
* **Carrier Gas Pressure Control Sub-Menu:** allows the user to set individual parameters for up to four events. Each event contains the same three parameters, *Start Pressure*, *Time* and *End Pressure*.
* **Auxiliary Gas Pressure Control Sub-Menu:** allows the user to set individual parameters for up to four events. Each event contains the same three parameters, *Start Pressure*, *Time* and *End Pressure*.

Chapter 2. Installation

Chapter 2.1 System Requirements

To be able to run OCS your computer must have the following:
- An IBM or 100% compatible PC
- 80386SX or better processor
- Windows^{TM} version 3.1 or 3.11 or Windows 95
- A minimum of 4 megabytes of RAM
- A VGA or better graphics adapter. Graphics adapters capable of displaying 800 * 600 resolution recommended
- A Windows compatible mouse or similar pointing device
- A hard disk with a minimum of 1 megabyte of free disk space
- a free RS232 serial communications port, or a free expansion slot to install the extra communication port that comes with the OCS package in.

Chapter 2.2 Installing the Hardware

1. To prevent damage to either the supplied communications card or the computer hardware, installations should be performed only by trained personnel.
2. If no RS232 port is available on your system, the extra communications card that comes with the OCS package should be installed. Refer to chapter Chapter 2.2.1 for details.
3. Attach the communications cable that came with the OCS package to both the Optic2 and the correct RS232 port on your PC. The male connector should be inserted into the Optic2, the female connector should be attached to the communications port on the PC.

Chapter 2.2.1 Installing the Extra RS232 Card

In case the computer that is to be used to run the OCS software does not have a free RS232 port, an extra communications port is supplied with the OCS package.
Before installing the card, you should determine how it should be set up. To do this, switch on your computer without running Windows, or run an MSDOS box (available in the Main window in Program Manager). Go to the Windows directory, and run the program MSD. MSD will display information about your computer. Look up the information about **COM ports**. The extra communications port should be set up in such a way that it does not conflict with COM ports already present in the system[1].
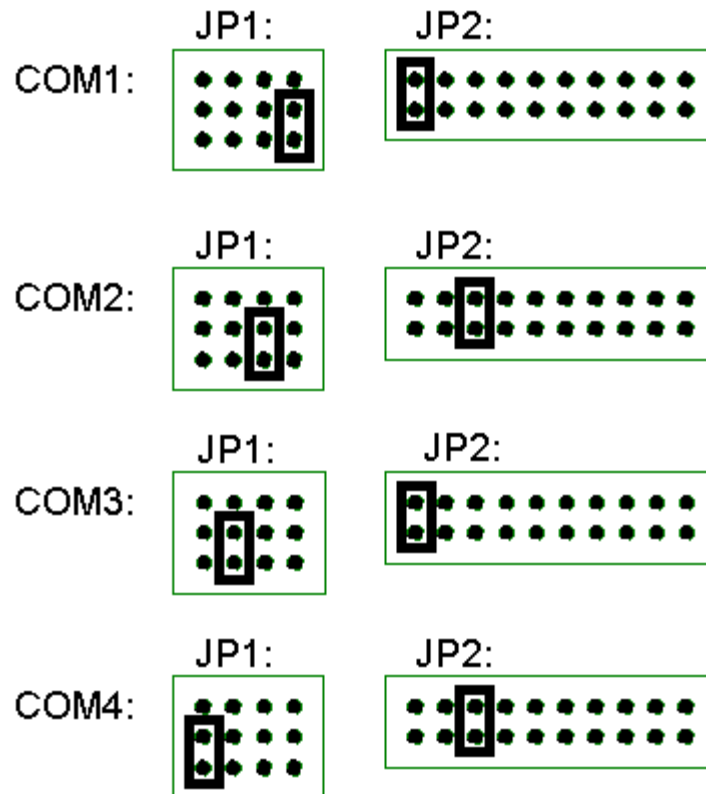
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[1] Older ATI graphics cards, such as the ATI Vantage, have a built-in mouse port. This mouse port uses COM4. If you were to set up the extra communications port as COM4, your ATI card would report a faulty chip when the computer is next switched on.

The communications card is set up using two sets of jumpers, labelled JP1 and JP2.
JP1 has 4 columns of three pins, numbered 1 .. 4 *from the right*, i.e., the rightmost row is row number 1.
JP2 has 10 columns of two pins. The pins are numbered 1 .. 20. Numbering starts from the left.
The figures show how to set up the card for use as various COM ports.

In these setups, COM1 and COM3 use IRQ4, and COM2 and COM4 use IRQ3. These are the normal settings. If you want to use a different IRQ, be sure to use the Control Panel Ports option to make Windows aware of the new IRQ.

If you use **Windows 95** you may not have MSD. In that case you will need to use the Windows 95 device manager to find out which COM ports are present on your system, and to possibly set a new IRQ.

Chapter 2.3 Installing the Software

1. Turn on your PC and start Microsoft Windows.
2. Insert the OCS distribution disk into the disk drive. We will assume drive **A:** is being used. OCS is supplied on a high density (1.44MB) 3.5" floppy disk. Different formats are available on request.
3. From the Program Manager menu, execute the **File | Run...** option.
4. In the **Command Line** box, type **A:setup**
5. Click the OK button. The set-up program will now start.

6. The set-up program now asks to enter the directory where you want to install OCS. This directory should be on (one of) your hard disk(s).
7. As files are being copied to your hard disk a progress dialogue will be displayed.
8. A dialogue box will appear asking for a group name to be installed in the Windows program manager (or an item to be installed in the Programs section of the Start button, in case of Windows 95).
9. Set-up has created a group in the Windows Program Manager containing the OCS icon. To finish the installation, double click the left mouse button on the icon to start OCS.

The OPTIC2 has to put in remote control by turning it on while pressing on the *run/end* button. Hold this key until on the display appears: remote.

10. A dialogue box appears asking for a user name and password. The password is initially XYZZY, but it may be changed using the set password option[2]. Enter a user name and password, and click the okay button.
11. OCS will now attempt to communicate with an Optic2 attached to COM port 3. If no Optic2 is attached, or if the Optic2 is attached to a different COM port, it will fail to do so. If it informs you of not being able to communicate with an Optic2, it will ask if it needs to Cancel or Retry. Select Cancel.
12. Use the **Config | Hardware** menu option to select a different COM port for Optic2 communications, if required.

This completes the installation of the OCS software.

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[2] To clear the password, click the set password option, and enter XYZZY in the "old password" edit control. Leave the two edit controls for the new password empty. Click OK. You will now no longer have to enter a password.

Chapter 3. Editing Methods

Editing injection methods is one of the two things OCS does (the second is sending methods and controlling other aspects of the Optic2, which is discussed in the next chapter).

Chapter 3.1 The Toolbar

The toolbar at the top of OCS is used to (from left to right)[3]:
- create new methods
- load methods previously saved methods
- save methods
- optimise scale
- switch between displaying time co-ordinates in seconds or minutes

When the **New Method** button clicked, a small menu is displayed which lets you choose which type of Optic2 method to create. Choose from:
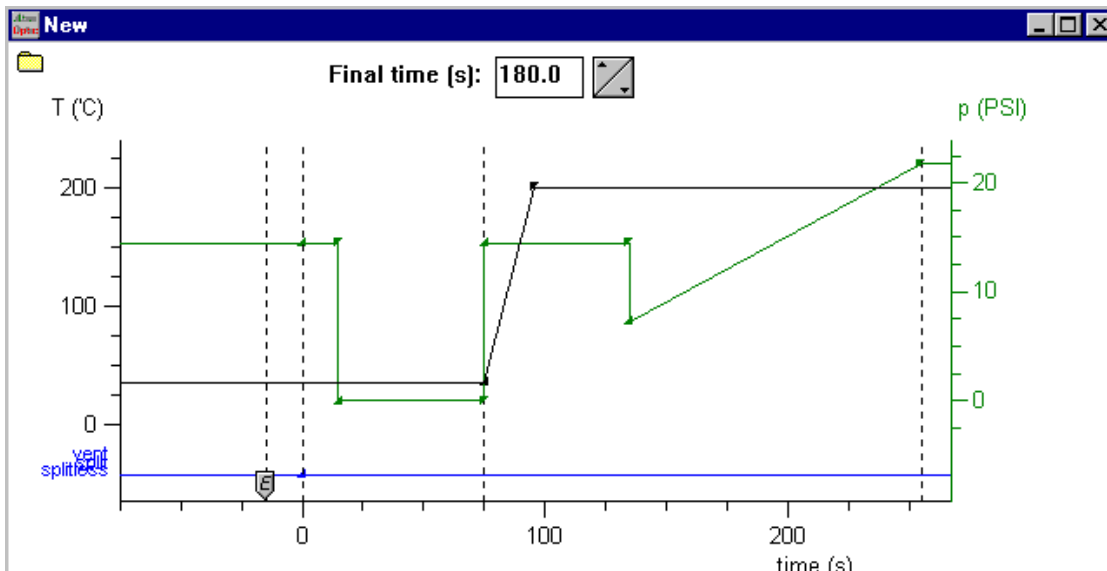- split method
- splitless method
- large volume method
- desorption method
- expert method

The new method will now be displayed in a method edit window, resembling the one displayed below.

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[3] More to the right are three buttons used to control the way multiple open edit windows are displayed:
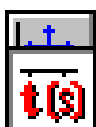.

In this case, the temperature profile for the method is displayed in black, the carrier gas pressure in green, and the split and vent valve states in blue. To change the colours, try using the **View | Attributes** menu option.

Chapter 3.2 Adjusting Scale

To zoom in on parts of the graphic display, go to the upper left corner of the part of the graph you want to zoom in on. Click the left mouse button, keep it depressed, and drag the mouse cursor to the lower right corner of the part of the graph you want to zoom in on. Now release the mouse button.
To zoom back out, click the right mouse button.

To optimise the scale, click the **Optimise Scale** button in the toolbar.
To switch between displaying time co-ordinates in seconds or in minutes, use the time button in the toolbar.

To set a specific scale for the graph, use the **View | Edit Scale** menu option.

Chapter 3.3 Setting Method Run Time

An edit control containing the method run time is displayed at top in the method edit window. Click in the edit control, then enter a new **Final Time**, or use the spin control at the right of the edit control to set a new value for the final time. The graph will be updated to reflect the new final time you set, after a short delay[4].

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[4] The delay is there in case the final time is adjusted further.

Chapter 3.4 Adjusting Gradients

Let's now look at how *gradients* may be adjusted in the method window. The term *gradients* is used to denote temperature ramps, pressure ramps, as well as split and vent valve state changes.

Whenever a gradient changes, OCS puts a small triangular marker on the screen. This is called a gradient *node*. If the node can be moved, changing its horizontal or vertical position, the mouse cursor will change shape when the mouse is placed over the node. Along with the change in mouse cursor shape, the position of the node will be displayed in the toolbar, as shown at right.

To move the node, click the left mouse button, keep it depressed, and simply drag the node to the new desired position. Depending on the type of node you're moving, and the method type being edited, nodes may have fixed horizontal positions or not.

In expert methods, if you press the control key while dragging the node, an extra gradient will be created as soon as you release the mouse button. Another way to add gradient nodes is to move the mouse cursor over the set of markers at the top left of the screen, click the left mouse button, and drag the mouse to the location where the new node should appear. Then release the mouse button. From left to right the markers indicate a new temperature ramp, a new carrier gas ramp, a new auxiliary gas ramp, a new split/vent valve state change, and new auxiliary output state changes.

Chapter 3.4.1 Deleting gradients

To delete a gradient node, move the mouse cursor over the node, and click the right mouse button. This will display a small menu, allowing the node to be deleted. Only the expert methods allow gradients to be deleted.

Chapter 3.4.2 Undoing changes

Use the **Edit | Undo** menu option, or press the **Alt + Backspace** keys, to undo a gradient modification. Any type of modification can be undone, be it moving the node, or adding or removing the gradient.
Use the **Edit | Redo** menu option to redo the change, or use the **Alt + Shift + Backspace** key.

Chapter 3.5 Changing Equilibrium Time

The equilibrium time is displayed using a small pentangular marker at the bottom of the graph. To change the equilibrium time, move the mouse cursor over the marker, click the left mouse button, and simply drag the marker to a new value.

Chapter 3.6 Changing Initialisation Time

Only for expert methods, the initialisation time is displayed using a small pentangular marker at the bottom of the graph. To change the initialisation time, move the mouse cursor over the marker, click the left mouse button, and simply drag the marker to a new value. Note that to increase the initialisation time, the marker needs to be dragged to the left.

Large volume methods have an initialisation time also, but no marker is used to display it. Instead, the pressure gradient is used to change the initialisation time.

Chapter 3.7 Editing in a dialogue

You may prefer to change settings for the method in a dialogue box, rather than graphically on screen. To do this, use the **Edit | Edit in Dialogue** menu option.

Chapter 3.8 Converting to Expert Method

All non-expert methods may be turned into an expert method by using the **Edit | Convert to Expert** menu command. All aspects of the method will remain unchanged, with one exception: the initialisation time is set to 30 seconds. The original methods did not have an initialisation time, except for large volume methods. Importantly, in case of large volume methods, the large volume method initialisation time is not used, but is assimilated into the various ramps, and a new initialisation time of 30 seconds is set.

Chapter 4.   Method Sequences

The Optic control software is able to run a sequence of several methods. Typically this option will be used with an autosampler

Chapter 4.1 Sequence Menu Options

The followin menu options are used to handle method sequences.

Chapter 4.1.1 Sequence | New

This option creates a new sequence.
It is advisable to set up a number of methods to be used in the sequence before creating the sequence. The methods should also be saved to disk.
When a sequence is opened all open method windows will be closed. If a method has not been saved, you will be asked if you want to save it.

Chapter 4.1.2 Sequence | Open

This option loads a previously saved sequence from disk.

Chapter 4.1.3 Sequence | Save

This option stores a method sequence in a disk file. The sequence can later be retrieved using the **Sequence | Load** menu option.

Chapter 4.1.4 Sequence | Close

This menu option removes the sequence. The Optic Control Software will resume running single methods again.
If the sequence has not been saved to disk, you will be propted if you want to do so.

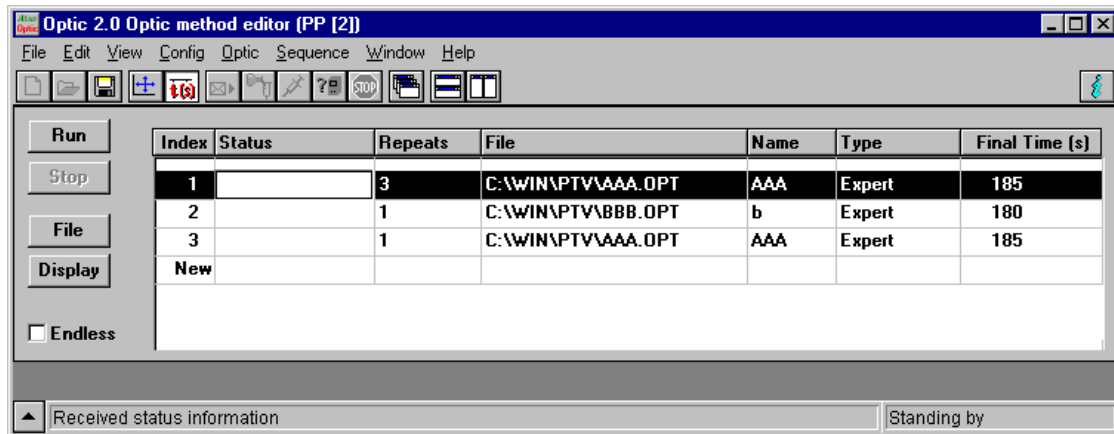### Chapter 4.1.5 Sequence | Run and Sequence | Stop

These menu options start and stop the current sequence.
As soon as a sequence startc, it will no longer be possible to change it, or to change any methods.

Chapter 4.2 Editing and Running Sequences

When a new sequence is created or an existing sequence is loaded from disk, the sequence box will be displayed. The Optic Control Software will look something like the example displayed below.

The sequence box has the following items:
- the **Run** button starts the sequence. It has the same functionality as the **Sequence | Run** menu option. As soon as a sequence starts running, neither it nor the methods can be changed.
- the **Stop** button stops the sequence. It has the same functionality as the **Sequence | Stop** menu option.
- the **File** button loads a method file onto a sequence line. To add a new line to a sequence, highlihgt the line marked **New** and click the **File** button.
- the **Display** button displays the method that is highlighted in the sequence list.
- if the **Endless** box is checked, the sequence will cycle endlessly. As soon as the last method has been executed, the first method will be executed again.
- the **Sequence List**.

Chapter 4.2.1 The Sequence List

The sequence list has the following columns:
- the **Index** column is simply a line number. The line with index marked **New** will be added to the sequence as soon as information is entered into it, typically by pressing the **File** button.
- the **Status** column contains the status of each line. It is only used when the sequence is running, and will display the elapsed time for the active line.
- the **Repeats** column contains the number of times a method will be repeated. It is possible to select endless repeats.
- the **File** column contains the filename of a method.
- the **Name** column contains the name of the method.
- the **Type** column contains the type of the method, that is: split, splitless, etc.
- the **Final Time** column contains the length of the method.

Chapter 4.2.2 Editing Options

By right clicking the mouse on the sequence list, a number of editing options will be displayed in a popup menu. The options are listed below.

- **Insert Line** inserts a method line before the currently highlighted line.
- **Cut** removes the current line, and places it on the clipboard. It can be reinserted using the **Paste** menu option. This can be used to move lines,by cutting them from their original position and pasting them into the desired new position.
- **Copy** places a copy of the current line on the clipboard.
- **Paste** inserts a method line from the clipboard.
- **Delete Line** removes the current line without putting it on the clipboard.
- **Run from Here** starts running the sequence on the selected line. This option can be used to start running the sequence at any position.
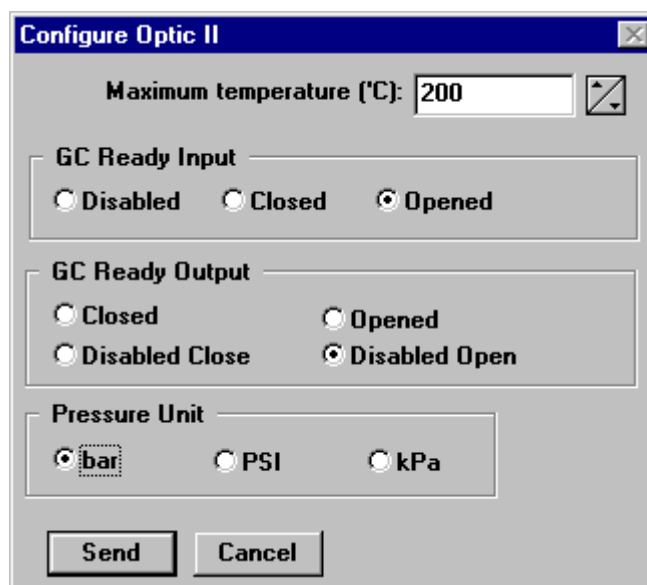
Chapter 5. Controlling the Optic2

OCS can set configuration and standby options for the Optic2, as well as send it method definitions, and run those methods.

Chapter 5.1 Hardware Configuration

The **Config | Hardware** menu option is used to select the communications port the Optic2 is attached to. It also allows the type of Optic2 to be selected, although this is rarely needed, as OCS derives the type of Optic2 being used from the communications it has with the Optic2.
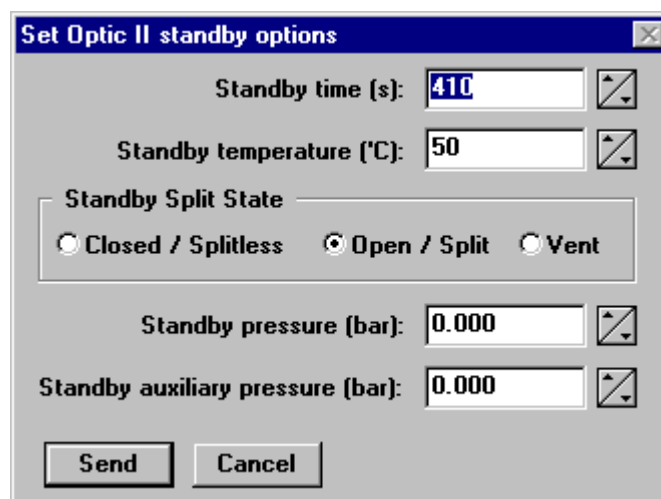
Chapter 5.2 Configuring the Optic2

The **Config | Config Optic2** menu option lets you configure various aspects of the way the Optic2 operates. Refer to the Optic2 documentation for details.

Chapter 5.3 Setting Standby Options

The **Config | Standby Options** menu option sets standby options for the Optic2. Refer to the Optic2 documentation for details.

Chapter 5.4 Running Injection Methods

The following buttons are shown on the toolbar:

The leftmost button is used to send a method to the Optic2 after it has been created and edited. This duplicates the **Optic2 | Send Method** menu option.

The second button is used to load the method in the Optic2. This means that the Optic2 initialises to the initial temperature, pressure, and valve values for the method. This duplicates the **Optic2 | Load / Cancel Method** menu option. Pressing the toolbar button again (or executing the menu option again) cancels initialising the method.

The third button starts the method. This duplicates the **Optic2 | Start** menu option.

The fourth button cycles through parameters being displayed on the Optic2 display. Possible parameters are temperature, split state, and pressures.

The fifth button stops the method running. This duplicates the **Optic2 | End** menu option.

Above, all five buttons are displayed in their enabled state. However, in the OCS program, not all buttons will be enabled at any one time, because the availability of the various actions attached to the buttons depends on the state of the Optic2. The buttons are enabled and disabled depending on the Optic2 state as appropriate.

Chapter 5.5 Requesting Feedback from the Optic2

The Optic2 can provide two types of feedback: status and configuration information. Use the **Optic2 | Get Status** and **Optic2 | Get Configuration** menu options.

The Optic2 status is also continually requested by OCS. It is displayed in the lower right corner of the screen. Since the availability of the various method commands and toolbar buttons also depends on the current Optic2 status, these commands and buttons are continually enabled or disabled as appropriate.