



EasyView User Manual

From Version 5.7 onwards

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Licence Terms and Conditions	3
I. Getting Help.....	7
Chapter 1 - Introduction.....	8
EasyView Overview	8
Topics Covered by this Manual	8
An RGA as a Source of Data.....	8
Connecting Control Units.....	8
1.1 Software Installation Pre-requisites	9
Chapter 2 – Software Installation.....	10
Chapter 2 – Software Installation.....	10
2.1 Administrative Installation Using the Administrative Assistant	10
2.2 Administrative Options.....	13
2.3 Creating User Accounts.....	17
2.3.1 Overview	17
12.3.2 Create the “RGA User” Account.....	17
2.4 User Set-up	19
Chapter 3 – RGA Device Manager.....	21
3.1 Device Manager Overview.....	21
3.1.1 Servers Menu.....	21
3.1.2 Details.....	22
3.1.3 Configure	22
3.1.4 Help	23
3.2 Using Device Manager	24
3.3 Finding Undiscovered Control Units	29
3.3.1 The Troubleshooting Wizard	29
3.4 The Hardware Set-up Utility.....	32
3.4.1 General	32
3.4.2 Trips	33
3.4.3 Analyzer.....	34
3.4.4 Inlets	35
3.4.5 Analog I/O	36
3.4.6 Digital I/O	37
3.4.7 Delays.....	38
3.4.8 Tools	39
3.4.9 Commit Changes	39
6. Using EasyView.....	40
Overview.....	40
6.1 Starting EasyView.....	41
6.2 Toolbars.....	42
6.3 Analog Mode	43
6.4 Barchart Mode	45
6.5 Leak Check Mode.....	47
6.6 Peak Jump Mode.....	48
6.7 Disk Store	50
6.8 The Main EasyView screen	52
1 Title Bar	52
2 Menu Bar	52
3 EasyView Control Icons	52
4 Views Windows	52
5 EasyView Control Window	52
6 Toolbars	52
7 Default Toolbar	53
8 Scan Navigation Toolbar	53
9 Chart Display Toolbar	53
10 Trend Display Toolbar	54
Customizing Toolbars	54
Adding Annotations.....	56
7. Changing/Adding Views.....	57
7.1 Swept Measurement Properties Settings.....	59
X-Axis	59
Annotations dialog	60
Initial Y-axis Properties	60
7.2 Trend View Properties Settings	62
Adding a Trend view	62
Editing a Trend channel	63
Editing a mass channel	64
Editing the channel display	65

Configuring the Trend's Y-Axis	66
Y-Axis Scale Properties	66
Y-Axis General Properties	68
Y-Axis Auto-range Properties	68
Configuring the trend time axis	69
Editing a live Trend	71
Adding annotation to a Trend.....	71
View Global Properties	72
8. Other Menus	73
View Pull-Down Menu	73
Toolbars.....	73
Status Bar	73
Properties	73
Window pull-down menu.....	74
New Trend Window.....	74
Arrange All Windows.....	74
Bring Recipe to Front	74
Cascade Recipe.....	74
Tile Recipe Horizontally	75
Tile Recipe Vertically	75
Selecting Individual View	75
9. EasyView Diagnostics.....	76
10. EasyView Tuning.....	77
Easy Tuning Mode.....	77
Adjusting peak alignment.....	78
Adjusting peak width	78
Adding mass flags.....	79
Deleting mass flags.....	79
Advanced Tuning.....	80
11. EasyView Calibration	81
12. Preferences.....	85
Units of Pressure	85
Auto View to front.....	85
Graph Settings.....	86
Common Gases List	86
13. Printing.....	87
Printing a View	87
14. EasyView Tools	88
14.1.....	88
Backup and Recover	88
14.2 Computer Lock	90
Exiting Computer Lock.....	92
15. Java Web Applet.....	93

I. Getting Help

Much of the application software suite has online context sensitive help. Please use this along with the reference material in this manual as a starting point for getting help.

We are always pleased to provide personal assistance where we can. If you are experiencing difficulties or need further help, feel free to call your local MKS Spectra facility and ask for the Customer Support Group. Please have the following information ready so that our technical staff may help you quickly and effectively:

The serial numbers of the analyser and control unit; each of these numbers begins with the letters "MKS" or "LM"

The Process Eye or EasyView software version number; this is written on the software CD ROM and can also be found on screen by selecting **Help | About** from the menu-bar.

The operating system used and any Service Packs which have been applied.

Support Contact Telephone Numbers:

United Kingdom
+44 (0) 1270 250150

North America
+1 (408) 778-6060
1-800-VAC CHECK

Chapter 1 - Introduction

The MKS software covered by this manual is designed to operate with the full range of MKS Spectra "smart head" instruments such as Microvision2, e-Vision and HPQ2.

The software will run under Windows 2000, XP, Vista (32/64) and Windows7 (32/64) desktop operating systems and Windows Server 2003 and 2008. No other versions of Windows are suitable.

Note: This manual is to be used in conjunction with version 5.7 onwards of EasyView. If you are currently using an earlier version please contact your local MKS Spectra representative to discuss upgrade options.

EasyView Overview

The EasyView package is designed to provide an easy-to-use working environment in which to use an MKS RGA. While sharing the features of the Process Eye Professional package such as acquisition speed and wide dynamic range, the package is also fully interactive. EasyView contains all the same capabilities of data acquisition, storing to disk, sensor calibration and degassing the ion source as Process Eye Professional and is compatible with external hardware such as a Remote Vacuum Controller or a Cirrus bench top system.

Topics Covered by this Manual

The manual starts with the installation of the software and hardware. There are sections on Getting Started, acquiring data and displaying data in ways that suit your pattern of work.

An RGA as a Source of Data

This manual uses client server concepts to describe the mechanism of acquiring data and displaying it for the user. The application software (Process Eye Professional or EasyView) is the client. The control unit is the server, since it is the source of data. Network enabled instruments, such as the e-Vision, and Microvision Plus-IP and Microvision2 have their data servers built in. Serial instruments such as the Microvision Plus must be connected to a PC that runs server software that is capable of multiplexing more than one serial instrument and acting as the data server to the connecting client. This Windows software is referred to as the 'Local RGA Server'.

The client application and the data server communicate using a proprietary MKS ASCII protocol. If you want to write your own client software, or to integrate RGA's into your existing system control software, MKS provides a software development kit (SDK) for application developers as a separate product.

Connecting Control Units

The Microvision Plus and HPQ2 smart head control unit connects to the PC using a serial interface that may be RS232 or RS422. **RS485 is not supported.**

Microvision Plus-IP and HPQ2-IP control units, connect via a standard network interface. **The serial RS232 connection on the rear panel of these instruments should not be used** for general data acquisition. On very rare occasions it may be necessary to use it for diagnostic purposes.

The Microvision2, e-Vision, and e-Vision Plus and eVision2 control units connect exclusively using a standard network interface.

For the greatest security and reliability of data MKS recommends that networked instruments are on their own physical network and that the computer that controls them have a dedicated separate network card. However, this may not always be practical or desirable, and it is quite possible to run these control units on a business or office network.

The control unit must be one suitably configured to run with Process Eye Professional or EasyView. If the control unit was supplied with another software package or a previous version of Process Eye or was not obtained directly from MKS or one of its agents or distributors, please contact your local MKS Spectra facility for upgrade instructions.

1.1 Software Installation Pre-requisites

EasyView software runs on any of the following operating systems:

Windows XPServer (2003/2008)
Windows 2000/7 (32/64bit)
Windows NT4 with service pack 6/Vista (32/64bit)
Windows Me/XP
Windows 98se/2000

Before you start to install your RGA application software make sure you have fitted and pre-configured any plug-in communication cards you may require.

You must be an administrator of the computer to install the software. However, once the software has been installed you can run it with simple 'user' privileges. MKS recommends that you do so, since this is a key component in any strategy for preventing malicious software infecting the system.

The following sections detail the software installation, creating an RGA User account and configuration of the main application program.

Chapter 2 – Software Installation

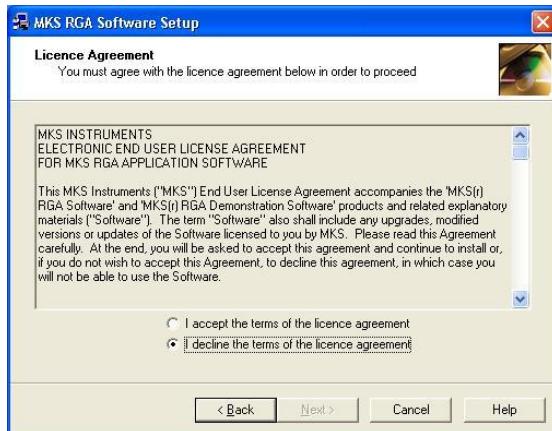
Insert the CD-ROM in the drive; if it does not auto-run, click the *setup.exe* application in the root folder. From the CD browser select the option to install the software. This will launch the **Administrative Assistant** that will guide you through the complete installation process.

2.1 Administrative Installation Using the Administrative Assistant



The Administrative Assistant contains full context-sensitive on-line help.

You can access this help at any time either by clicking the **Help** button or simply by pressing the **F1** function key on your keyboard.



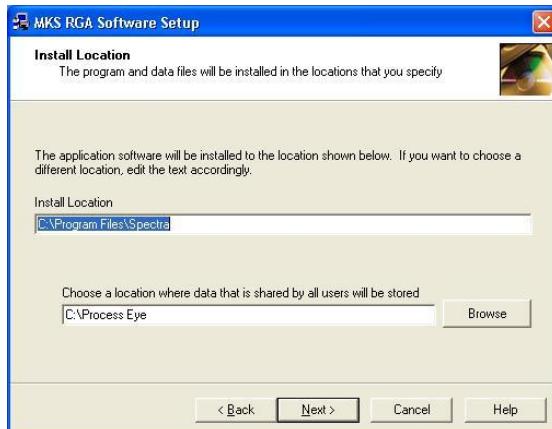
You must agree to the terms of the software license in order to proceed with the installation. The license terms are printed in the preface of this manual.



When prompted, enter the quick set-up code “easyview”.

You must enter the code on this page of the Assistant. The code is not case sensitive.

The pages that follow depend on the Windows operating system installed on your computer. This manual shows the most common dialogs from a Windows XP install. Your set-up may include others, which should be self-explanatory. Remember that you can refer to the on-line help for any pages not shown in this manual.



You can choose the file locations for program files and system data.

You should always install the program files to your locale specific Program Files location since Windows prevents any changes to this area of the disk by any users other than administrators.

In contrast, the location for data needs to be accessible to everyone who will use the RGA because these settings will need to be changed at run-time.

If either of these folders needs to be created, the Assistant will do this for you.



A **Complete Install** allows you to run RGA's on this computer and to save the data that is generated.

Sometimes you will want to install the software on a computer that will only be used to recall and review data files that were stored somewhere else.

In this case you do not need all the real-time applications and you can elect to perform an **Off-line Installation**.

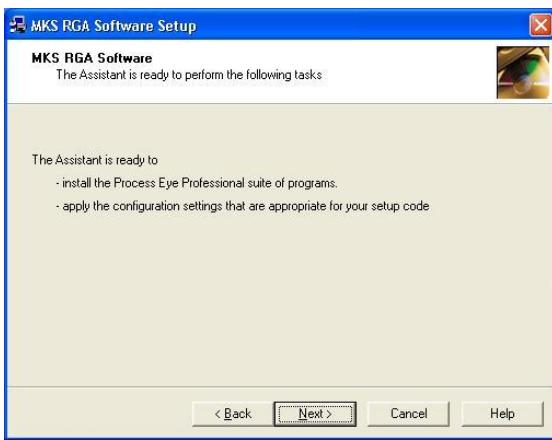


MKS recommends that you keep your computer up-to-date with the latest service packs from Microsoft.

If you do not have the latest Windows service packs installed for the operating system and for Internet Explorer, the Assistant will optionally apply them for you.



Once the Assistant has completed the initial checks it is ready to install the correct software for your chosen set-up code.



The complete installation process may require the Assistant to perform several tasks which are itemised on this screen.

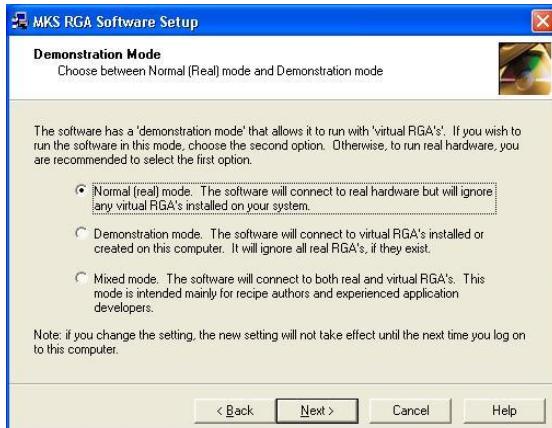
Some set-ups may involve a reboot of the computer part way through. All these steps will be handled automatically.

2.2 Administrative Options

Having completed the installation of the necessary files to your hard drive, the final stages of the set-up process involve the configuration of several administrative set-up options.



You can re-run this section of the Assistant at any time after installing the software, so any choices you make now may be changed later.



The first option on this page is to choose the data acquisition mode. Usually you will select the first option as indicated.

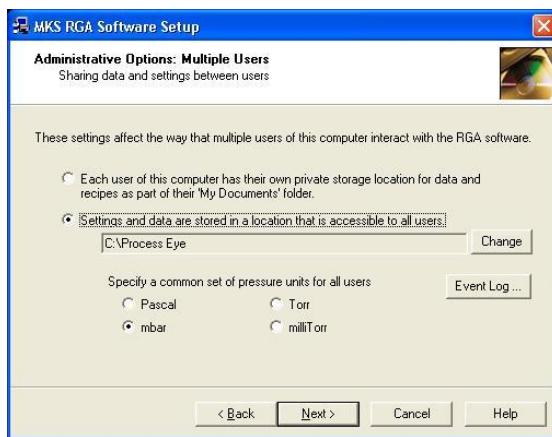
In **Normal** (real) mode the software connects to real hardware to acquire real RGA data.

In **Demonstration** mode the software connects to any number of 'Virtual RGA's' that, although they exist purely in the computer's memory, behave exactly like a real instrument

If this option is selected, the software will only connect to virtual RGA's.

(Note: strictly this is true only for Windows XP with the firewall enabled. Where no firewall is in place you would be able to connect to real network instruments in Demonstration mode.)

In **Mixed** mode the software will connect to both real and virtual hardware. This option is primarily intended for RGA software developers.



If multiple users log on to this computer, you can choose how they interact with the RGA software.

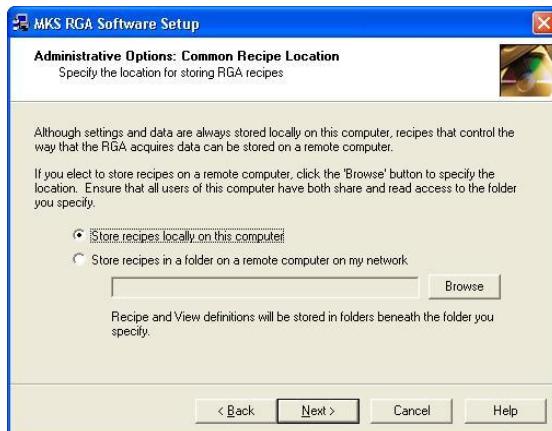
If you want each logged on user to have a separate location where they can save their data and settings, choose the first option on this page.

The Assistant will set up folder locations beneath each user's 'My Documents' folder.

However, it is perhaps more common that you will want to work in such a way that all the individual log-on users will share access to common data and settings. In this case you must select a folder that is accessible to all users.

The default location for this choice is the same folder that you chose earlier for the common system settings. You can change this selection by clicking the **Change** button.

If you elect to have a common location, you may choose the common units you will use for pressure. The **Event Log** button allows you to change some advanced settings that are also common to all users.



If you chose to have a common location for all users, Process Eye Professional users can then choose whether to maintain 'recipes' on this computer (the default) or to maintain a common set of recipes for multiple computers at one central location.

This is an advanced feature, which will be of interest only to users who are installing the software in a factory environment.

The Process Eye Professional software comes with several Security Features. By default these are usually un-checked (off). If you have never used MKS RGA software before, you are advised initially to leave the options un-checked. You can re-run the Administrative Assistant at a later time when you are more familiar with the product. These features are not part of the EasyView package.

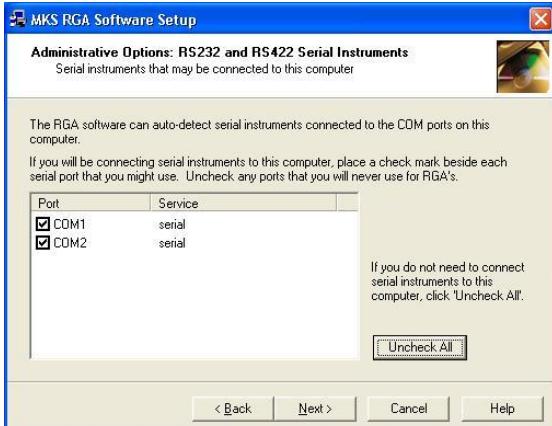


The **Watchdog** is a system tray application that continually checks that the main Process Eye application is running correctly. If it detects that it is not, it can shut it down and restart it.

The **Restricted user interface** does not include menus and buttons for changing or launching recipes.

You can prevent users from **Changing recipes** using the recipe-editing wizard.

You can **Lock down** the computer so that only authorised users can interact with the computer through the mouse and keyboard.



The RGA software continuously attempts to connect to an RGA instrument on all of your computer's serial ports unless you identify particular ports as being 'RGA-disabled'.

If you plan to connect RS232 or RS422 serial instruments to this computer, you will want to ensure all the serial ports to which you *might* connect an RGA are 'RGA-enabled'.

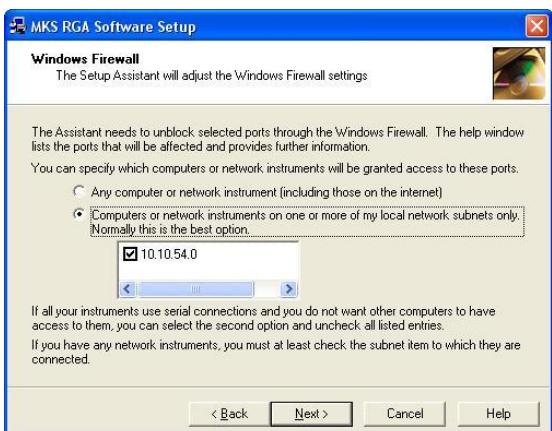
By the same token be sure to 'RGA-disable' any ports to which you connect other devices

If you only use RGA's with network connectivity, you should click the **Uncheck All** button to prevent the RGA software from continuously checking to see if there is an instrument attached.

If you have Windows installed, the Assistant will display the Windows Firewall page.

The Windows firewall became a default feature of Windows XP with the release of service pack 2 and is a standard feature of Windows Vista and Windows 7.

The Assistant will configure your firewall automatically so that the correct network ports are enabled to allow the RGA software to run correctly.



If you have Windows XP but do not have service pack 2 installed, the Assistant will show this page but will not make any changes to the firewall settings.

If you install service pack 2 at a later date, be sure to re-run the Assistant so that the firewall can be set correctly.

You may need to open the firewall to allow one or more of the following.

- Allow network instruments to communicate to this computer
- Allow other computers to which serial instruments are attached to pass data to this computer
- Allow an instance of the RGA software installed on another computer to access serial instruments connected to this one.

You can choose to allow any computer to have access to the network ports required by the MKS software, or you can choose to restrict the access to your local subnet(s) only. If you are familiar with the management of the firewall through Control Panel, you will recognise this restricted access as being the settings behind the Security Center 'Scope' button.

The default setting is to allow restricted scope.

Note that the Assistant will only set up the Windows XP firewall. It cannot configure any other firewall software. If using a third-party firewall, the following ports will need to be opened manually:

10013 UDP
 10014 UDP & TCP
 10015 TCP
 10016 UDP
 10020 UDP



This screen indicates that the Assistant has finished requesting information from you and is ready to apply the settings that you have entered.

If you choose **Cancel** at this point, none of the Administrative Options that you have entered will be applied.



The Administrative Assistant has finished.

You can re-run the Assistant and change any of the optional settings by selecting **Start | Programs | MKS RGA Applications | Tools | Administrative Assistant**.

If you are installing the software for the first time, this completes the first, administrative part of the procedure. You will complete the entire installation when you run the software as the RGA User for the first time.

MKS strongly recommends that you create limited user privilege accounts for users of the RGA software. This procedure is detailed in the following section.

2.3 Creating User Accounts

2.3.1 Overview

The following section describes how to create a new local user and assign local user rights using the Windows XP environment as a guide.

This is not common for all Windows operating systems; advice from your I.T representative or MKS Spectra should be sought if you are unsure of how to continue, or the PC is part of your company network.

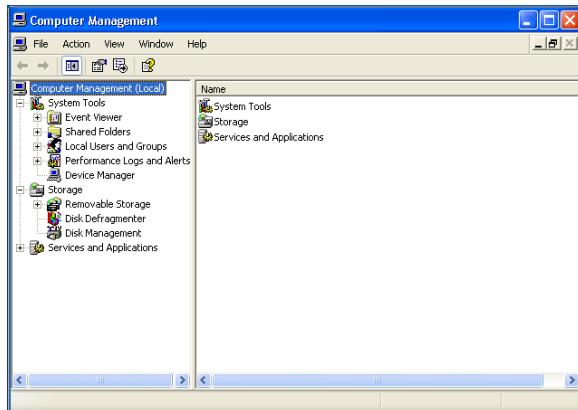
You will need to be logged on to the PC with an administrative account to create the **RGA User** account with assigned **User** rights.

If your PC is on a network, the RGA User will require a Domain account. Seek advice from your IT Staff if this is the case.

12.3.2 Create the “RGA User” Account

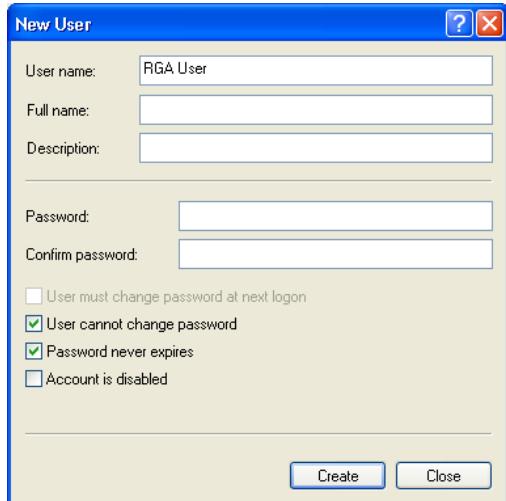


Click on the **Start** button, right-click on the **My Computer** entry and select **Manage** from the menu.



In the **Computer Management** dialog, click on the **Local Users and Groups** entry to expand the list and show the **Users and Groups** folders.

Right-click on the **Users** folder and select **New User** from the list.



It is recommended that you use the name **RGA User** to easily identify the account.

You can enter a full name, description and password if you wish.

Check the User cannot change password and Password never expires boxes as shown.

Click on the **Create** button and then click the **Close** button to return to the **Computer Management** dialog.

At this point, you should now log-off as the Administrator and log-on as the RGA User to continue with the **Software Setup** section.

2.4 User Set-up



You can run the **User Set-up** application at any time by selecting **User Set-up** from **Start | Programs | MKS RGA Applications | Tools**, but it will launch automatically the first time that you run a new or upgraded version of the RGA software.

Once again you will notice that there is full context-sensitive on-line help available by pressing the **F1** function key or by clicking the **Help** button.

The pages that follow depend on the main set-up code and also on some of the options selected by the administrator when the Administrative Assistant was run.

The **User Set-up Wizard** will install 'recipes' to the relevant target location. If the recipe collection that you want to install is listed, simply check the relevant box.



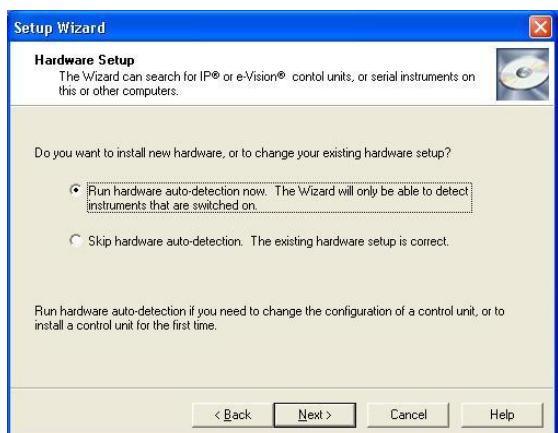
If you have been provided with a collection of recipes on a separate floppy disk or CD-ROM or by e-mail, click the **Have Disk** button.

Insert the disk and select it from the drop-down list, then click **OK**. Now the recipe collection will appear in the list.

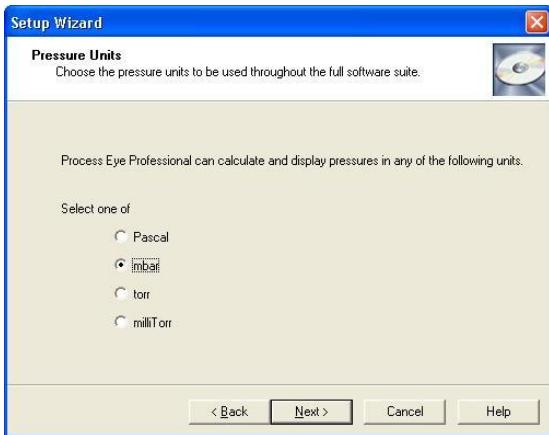
If the recipe collection has been e-mailed to you and the attachment is on your hard drive, select **Browse** from the drop-down list and find the **.lst** file that holds the recipe collection information.

The **User Set-up Wizard** can launch the **RGA Device Manager** application.

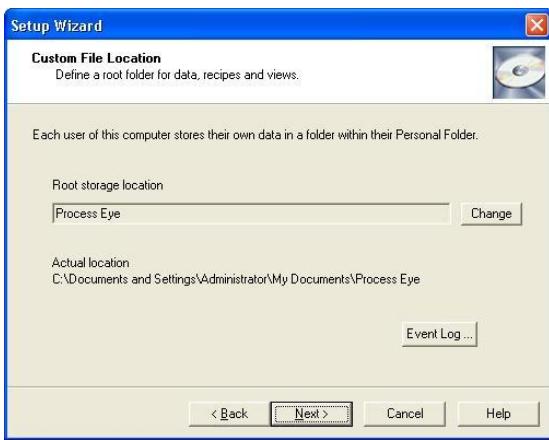
You use this for all aspects of hardware set-up. This application is described in full detail in chapters 2 and 3.



If you are installing the software for the first time by working step by step through this manual, it is easiest to select **Skip hardware auto-detection** at the present time. You will learn how to install hardware in the next chapter.



If the administrator elected to have each log-on user define their own personal settings, you may choose the units that you would like to use.

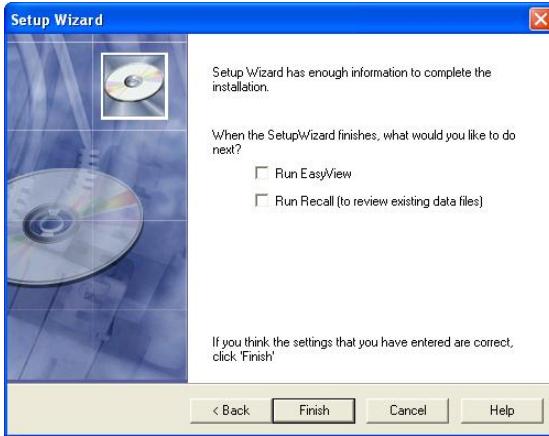


If the administrator elected to have each log-on user define their own personal settings, you may choose the location for recipe and data files.

You must choose a location somewhere beneath your personal **My Documents** folder.

The **Event Log** button sets some advanced settings relating to the maximum file size for the Process Eye master log file. This file records information such as when the application runs, when hardware was calibrated and when recipe errors are found. The default is to limit this file size to 100 Kb.

The last page of the **User Set-up Wizard** offers you the choice of running one of the main applications directly when the installation completes.



If you have not yet installed your hardware, leave these checkboxes unchecked.

When you click the **Finish** button, the selections that you have made in the Wizard are installed.

Chapter 3 – RGA Device Manager

3.1 Device Manager Overview

The RGA Device Manager is the main application for all aspects of hardware management including:

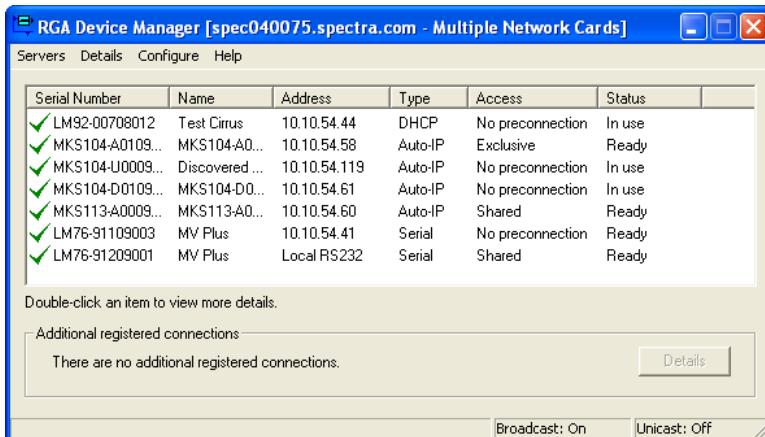
Installation
Configuration
Access control
Network configuration
RGA communications

The **RGA Device Manager** application can be found in:

Start | Programs | MKS RGA Applications

Or from the relevant page in **User Set-up**, accessed from

Start | Programs | MKS RGA Applications | Tools



Here is a typical view of the Device Manager application displaying details of all discovered instruments.

3.1.1 Servers Menu

Device Manager can employ two protocols for the discovery of connected instruments, Broadcast and Unicast. A Broadcast message is “heard” by all instruments on the same subnet as the host computer. Instruments installed beyond a Gateway are not discovered in this mode.

A Unicast message is targeted to a specific instrument installed on the remote side of a Gateway for example.

Unicast Servers

Use this menu to Add / Edit or Remove instruments that are installed on the remote side of a gateway. To add an instrument, enter the IP address assigned to it, select the relevant network adaptor and click OK. You will need an entry for each instrument you wish to use.

Refresh

Causes Device Manager to perform a re-discovery of attached instruments and display the results.

Broadcast Mode

Selecting this option limits Device Manager to discovery of instruments connected on the same subnet as the host computer.

Unicast Mode

Selecting this option limits Device Manager to discovery of instruments already defined in the Servers menu.

Both modes can be used simultaneously to discover remotely and locally installed instruments, in a large installation with many instruments it may be better to filter the discovery to instruments of interest. This can be done by adding these instruments as Unicast Servers (even if they are not installed on a Gateway) and selecting only the Unicast Mode. Device Manager will return results for these defined instruments only.

Exit

Closes the Device Manager application.

3.1.2 Details

More Details

The More Details item becomes available once an instrument is highlighted in the list and provides a more detailed description of the instrument.

View Auto-discovery Log

Provides information on the discovered instruments.

My Computer IP Configuration

Provides detailed, network specific information on the host computer, such as installed network cards and IP Address information.

3.1.3 Configure

Browse to This Instrument

Starts the default internet browser and opens the highlighted unit's home page (if applicable).

Change the IP Address

Allows changes to the instrument's current IP Address, or how the instrument is assigned an IP Address, see Section 3.1.3.

Software downloads should only be performed if recommended by an MKS representative or if required by upgrading to a newer version of Process Eye Professional

Package Download

Downloads the full suite of embedded server software to the instrument if needed. This function is unavailable for certain instrument types.

Download

Latest Embedded Core – downloads only the embedded core software (not available for certain instruments).

Latest Embedded Application – downloads only the embedded application software (not available for certain instruments).

Latest IP Server Application – downloads only the embedded Sever application software (not available for certain instruments).

Select a File – Allows the user to choose the file for download (not available for certain instruments).

Install or Configure This Instrument

Allows the user to:

Define the units of pressure

Configure the instrument – See Section 3.1.3.

Access

Connect to this instrument when the application software is launched.

Process Eye makes no connection to the instrument when started, a connection will be defined when a measurement is run.

Process Eye makes one of the following connections to the instrument;

Connect to this instrument when the application software is launched.
 Share this instrument with other users

Process Eye will make only an information connection leaving the instrument available for other users – Shared.

Connect to this instrument when the application software is launched.
 Share this instrument with other users
 Attempt to gain exclusive access to this instrument

Allows the user to select if Process Eye will make a control connection to the unit when the program is started – Exclusive

3.1.4 Help

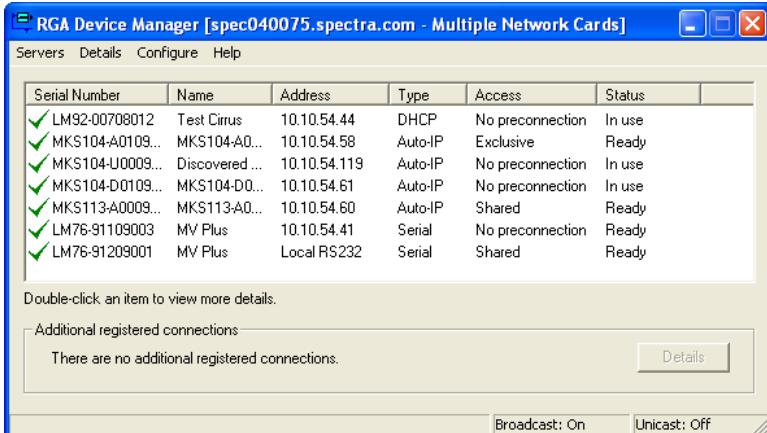
Help On Device Manager – starts the on-line help.

Troubleshoot Connections – starts the connections troubleshooter to aid in situations where communications with the instrument cannot be made.

About Device Manager – displays the version of Device Manager installed.

3.2 Using Device Manager

Here is a typical view of Device Manager running with several different RGA's connected via TCP/IP and RS232. The green check next to each unit signifies that each unit is correctly configured and ready for use.



Apart from the application name itself, the title bar indicates the name of the computer running Device Manager and its full IP address and subnet mask unless you have more than one network card installed.

If more than one network card is fitted, you can find the network properties of each card by clicking **Details | My Computer IP Configuration**.

If you need to connect to network RGA's it is important that you know the IP address of this computer.

The main window lists of all the RGA's discovered, they may be:
Serial instruments connected to COM ports on this computer
Serial instruments connected to a different computer
Network instruments

The list box displays:

The **Serial Number** of the instrument - This is a unique ID always prefixed with either "LM" or "MKS".

The **Friendly Name** - You choose this name, it is easier to locate a specific RGA by name rather than its serial number, the name given must be unique.

Address – The current IP address of the instrument if connected via TCP/IP, or the type of serial link if connected via a Com Port.

Type – If connected via TCP/IP then the protocol used to obtain an IP address is displayed (Auto-IP, DHCP or Static).

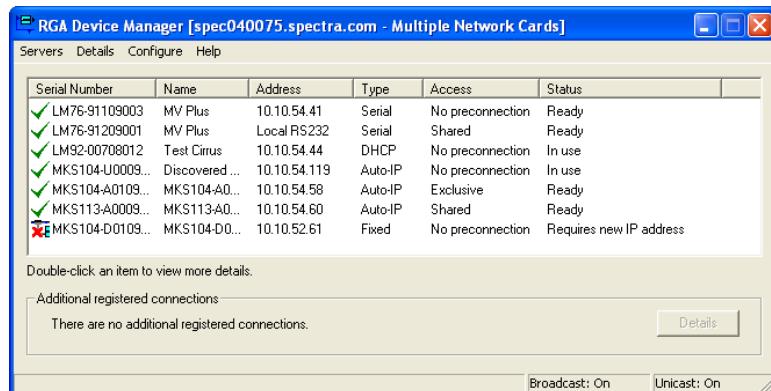
Access – whether the instrument is configured for "Exclusive" use or as a Shared resource.

Status – whether the instrument is In Use, Ready to accept a connection, or requires configuration.

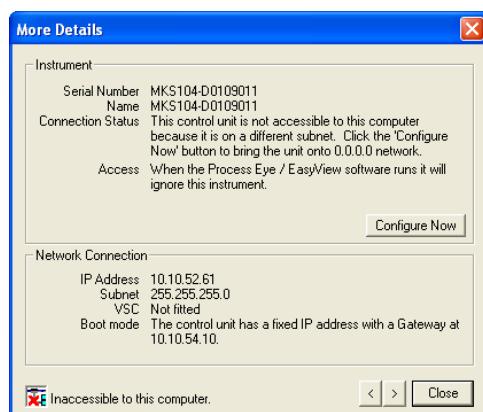
Additional registered Connection - If you have previously set up access rights to a control unit that cannot now be discovered, the unit's details are indicated in the additional registered connections panel. The Details button inside this panel gives more information.

Other aspects of the main window are described later in this chapter.

If you are installing a control unit for the first time, it is unlikely an instrument will appear in the list with a green check indicating it is ready for immediate use. It is much more likely to have a red cross beside it as shown in the next example.



Whenever you see an item with a red cross you should double-click the instrument in the list to bring up the **More Details** dialog.



This dialog displays much more information about the state of the instrument than can be displayed in the main window list.

If the instrument needs some form of installation or configuration, the **Configure Now** button will be enabled. When you click this button, RGA Device Manager will guide you through the procedure necessary to get you going.

Configuration changes to Microvision2 and eVision2 are carried out via the Web Interface. The Configure Now button will be unavailable for these types of instruments.

Here are some examples of what may be required:

Give the control unit a 'friendly name'.*

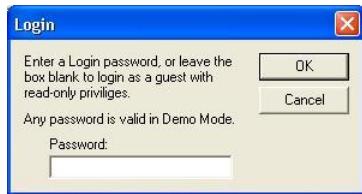
Assign the control unit a new IP address (network instruments only)

Download an upgrade to the embedded software.*

Set the pressure reduction factors for associated inlet hardware.*

*Carried out via the Web Interface on Microvision2 and eVision2 instruments

Sometimes it may be necessary to do more than one of these things. If so, simply double-click the instrument in the list and click **Configure Now** again to perform each task in turn.



Some control units will require a password in order to change these important settings.

If asked for a password use the Quick Set-up Code that you used to install the software initially.

If you are using browser software to browse to a network instrument, the password is also the Quick Set-up code.

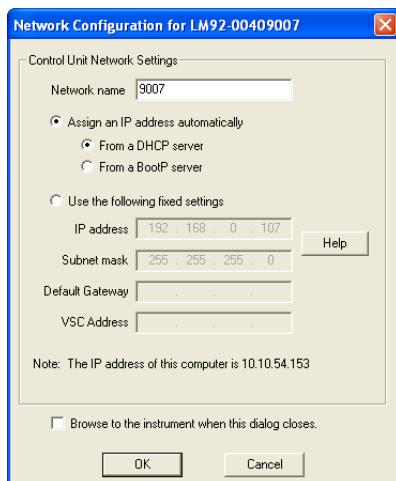


If you are requested to enter a friendly name for the instrument in a dialog such as the one shown, you must enter a name of your choice that describes the location or function of the RGA system.

If you have multiple RGA's, you can then easily distinguish one from another. Use simple alphanumeric characters for the name. You are prohibited from using characters such as @ # % [] or any quote marks.

If you have to enter a new IP address for the control unit, it is important that you understand how this address is chosen. There should be someone in your organisation that is responsible for networks and the assignment of IP addresses.

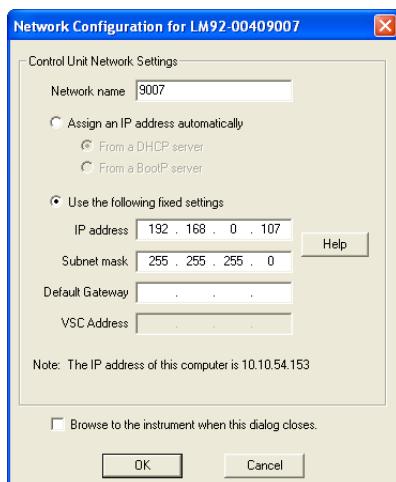
Please be sure to discuss with your network administrator what you plan to do.



You have a basic choice between assigning a fixed IP address and having a computer on the network assign one for you. This latter case is called DHCP addressing, but please ensure that you only select this option if you have a DHCP server on the same network as the instrument.

By selecting the Assign an IP Address Automatically option, you must then decide by which protocol an IP address will be assigned to the instrument. The two methods are either from a DHCP server or a BOOTP server. Choose the option that matches the protocol used on your network.

If you do not have, or do not want to use a DHCP or BOOTP server, you must assign a unique fixed address that 'matches' the address of the computer that will control it.



For example;

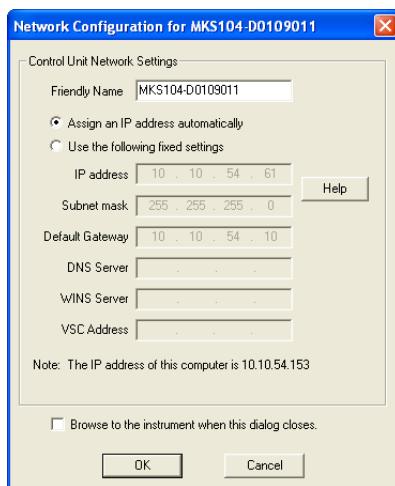
If your computer's address is 10.20.30.41 with a subnet mask of 255.255.255.0, you should choose a fixed address that is 10.20.30.xxx, where xxx is a number between 1 and 254 that is not used by any other device on the physical network. Never use 0 or 255 for the fourth number. These numbers have a special meaning on a network. The subnet mask for the control unit will almost always be the same as the subnet mask of your computer.

If you are in any doubt about IP addressing, please read Appendix 1 of this manual or read the on-line help on the subject by pressing the F1 key.

Microvision2, eVision2 and HPQ3 Instruments

These instruments offer the “Auto-IP” protocol for obtaining an IP Address. Auto-IP can be used when your network assigns IP Addresses automatically (DHCP or BOOTP), or when connecting the instrument directly to your PC. When connected directly to a PC also configured to have an IP Address assigned automatically, the instrument will work co-operatively with the host PC to assign compatible IP Addresses.

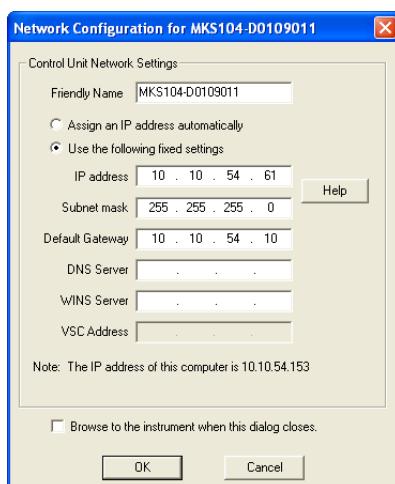
As a general rule, set the instruments IP configuration to match the host computers configuration. If the host has a static IP address, obtain a free address to use from your IT Administrator. If the host is configured to receive an IP address, configure the instrument to do the same.



If connecting to a network, you have a basic choice between assigning a fixed IP address and having a computer on the network assign one for you.

By selecting the Assign an IP Address Automatically option, the instrument will attempt to contact your DHCP server for a compatible address. If a DHCP server is not found, then Auto-IP, through arbitration with other network devices, will attempt to define an IP Address compatible with the network.

If you do not wish to use Auto-IP, you must assign a unique fixed address that ‘matches’ the address of the computer that will control it.



For example;

If your computer’s address is 10.20.30.41 with a subnet mask of 255.255.255.0, you should choose a fixed IP Address that is 10.20.30.xxx (where xxx is a number between 1 and 254 that is not used by any other device on the physical network) and use the same Subnet.

Never use 0 or 255 for the fourth number. These numbers have a special meaning on a network. The subnet mask for the control unit will almost always be the same as the subnet mask of your computer.

If you are in any doubt about IP addressing, please read Appendix 1 of this manual or read the on-line help on the subject by pressing the F1 key.

Once your hardware is installed the RGA Device Manager will show it as ready for use.

The main window of the RGA Device Manager is a live real-time view of all the RGAs on your system. The list updates every few seconds. Please wait a few seconds after installing a new control unit, or after changing its configuration. You must allow the unit time to reboot and for RGA Device Manager to acquire the new information about it.

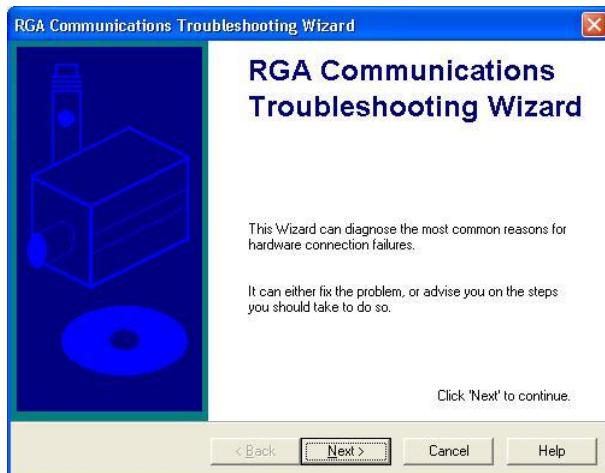
3.3 Finding Undiscovered Control Units

Although the RGA Device Manager will usually find any control unit, there may be occasions when you expect to find one in the list but it is absent. There will usually be a simple reason for this; use the Help | **Troubleshoot Connections** feature to launch a Wizard to help you get up and running quickly.

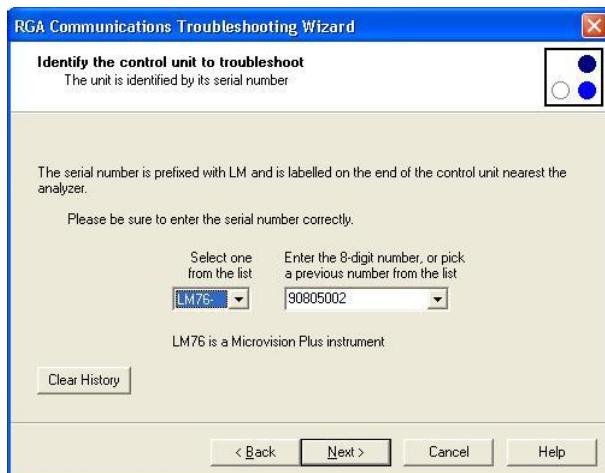
Examples of likely reasons for failing to discover control units are that the Windows firewall is blocking communications or that the serial port is not 'RGA-enabled'.

The Troubleshooting Wizard can diagnose these and other problems for you and can usually bring network instruments online. But before you run the Wizard, please check that the cables are installed correctly and that the instrument is powered up. Also, if you have used the control unit successfully before, take a moment to consider what might have changed recently with your computer's set-up. Have you changed your network settings? If so, please run the Administrative set-up first. This will ensure that your firewall settings are up-to-date.

3.3.1 The Troubleshooting Wizard



Clicking the **Troubleshoot Connections** button on the RGA Device Manager dialog starts the **Troubleshooting Wizard**.

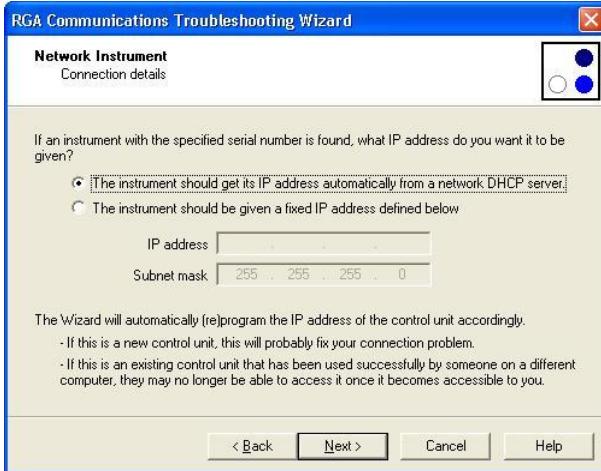


Enter the serial number of the instrument that you want to locate.

Be sure to enter it carefully. You do not want to re-configure the wrong instrument!

If you have used the troubleshooting wizard with this instrument before, you will find its serial number already present in the drop down list.

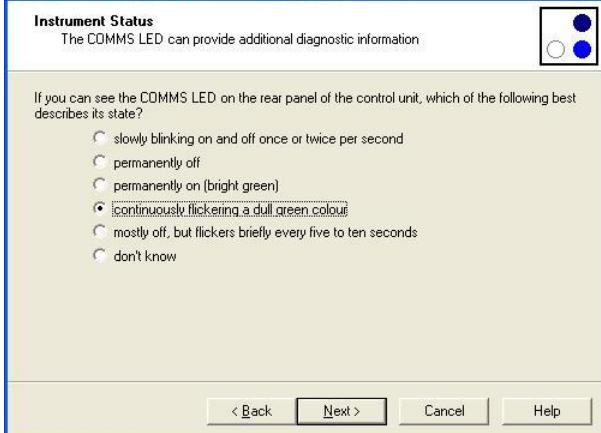
If you chose a serial instrument, you will have to enter the COM port number where the serial cable is connected.



If you chose a network instrument, choose from one of these options:

The control unit should get its IP address from a DHCP server on its network.

The control unit should have a fixed IP address which you must enter in the form of an address and a subnet mask.

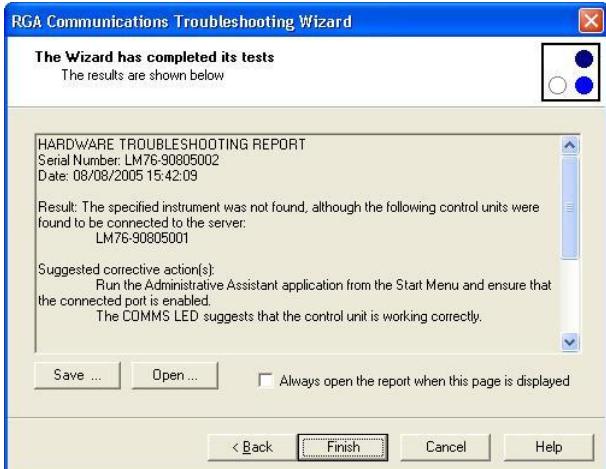


If you can do so, enter the instruments status by checking the LED's on the instruments rear panel and indicating the state of the LED's on this page.

Note: the wizard may display a different page from the one shown here depending on your particular control unit.



Click Next to begin the test, which, depending on the type of instrument, may take up to a minute.



When the test is complete, the Wizard displays a report comprising of the following information:

The overall result

Suggested corrective actions

The individual test results

Additional diagnostic information that could be useful in further dealing with the problem

The **Save** button allows you to save a copy of the report to show it to your system administrator for example. You can choose between one of two different report formats – plain text or html.

The **Open** button displays the report in html format in your browser making it easier to read. You can have the wizard always open the report in your browser by checking the check box.

This completes the introduction to the management of RGA hardware. The next chapter examines the **RGA Device Manager** application in more detail.

3.4 The Hardware Set-up Utility

This utility is not used with e-Vision, e-Vision+, the configuration is set at the factory. Microvision2 or eVision2 instruments are configured via the instrument's home page.

If you have just taken delivery of your control unit from MKS, it will have been configured correctly at the factory. You should not need to use this utility in order to get you started.

This utility is the means by which you modify the hardware configuration of your control units. You will need to enter a password in order to make changes to control units. However, if you leave the password box blank, you may view all the settings without changing them.

The configurable options are broken down into eight 'pages' of settings shown below.

The eight tabs are:

General
Trips
Analyzer
Inlets
Analog I/O
Digital I/O
Delays
Tools

The Process Eye Professional view and the counterpart web-page views are displayed in the following pages, the functionality, unless otherwise stated, remains the same.

3.4.1 General

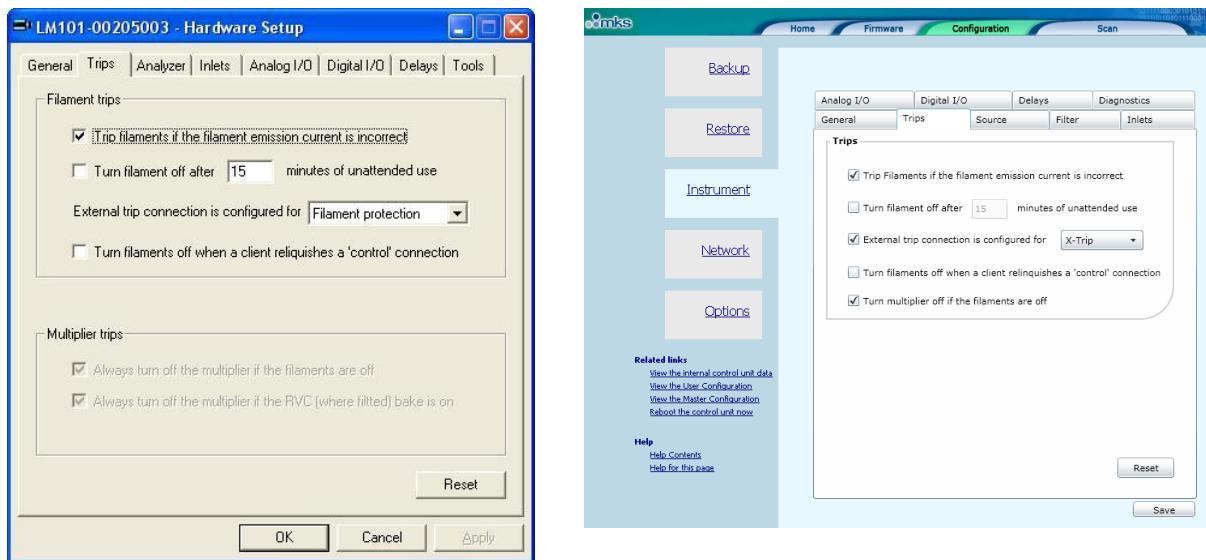
The screenshot shows two views of the 'General' configuration page. On the left is the Windows-based 'Hardware Setup' application, and on the right is a web-based configuration interface. Both pages show the following information:

Setting	Value
Serial number	LM101-00205003 at 10.10.54.253
Instrument type	HPQ-IP with Smart head RF
Multiplexer supply voltage	None
External hardware	No external hardware
MAC Address	02:80:AD:20:72:6F
Embedded software	Control Unit CORE V5.00a and MicroVision Process Eye/RGA V5.04
CPU	MC68HC000 running at 16 MHz
Memory	256 KB ROM and 256 KB RAM
'Friendly' name	HP02IP
Mains frequency	50 Hz
Filament type	Tungsten

The General tab displays many fixed items of information, including the embedded software versions. The three user-configurable settings are the name assigned to the control unit, the mains frequency and the filament type. You may also use this page as another way to download new embedded software to the control unit.

Be sure to set the mains frequency to the correct value for your locale. Selecting the wrong value can give rise to unwanted noise on the spectra acquired.

3.4.2 Trips



This tab allows you to set the behaviour of the filament and multiplier protection trips.

The electron emission current is continuously monitored by the control electronics.

Checking the first check box ensures that the filament is turned off if the emission current cannot be maintained.

If left un-checked, the filament will remain on but the peak data acquired may be subject to considerable error.

You can elect to have the filament turn off automatically after a predetermined number of minutes of unattended use.

It is recommended that the external X-trip jack socket is used to provide some interlocking of the filament circuit to an external hardware contact.

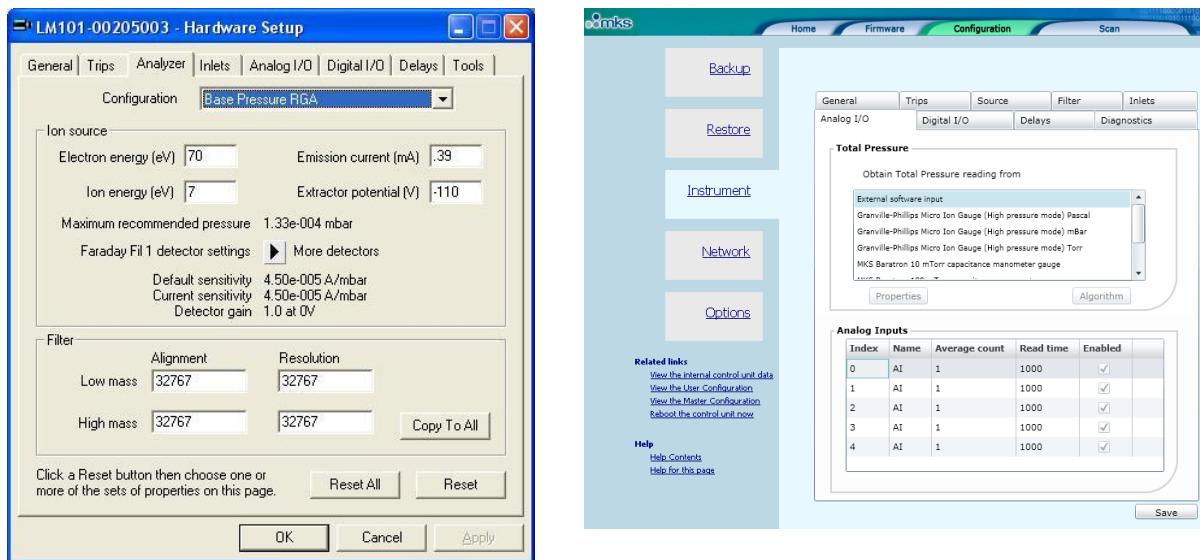
In this case you would select the **Filament protection** option from the drop-down list.

In some installations the external contact is used to actually turn the filament on or off. If this is the case, choose the **Filament control** option. You should not normally choose the **No protection** option.

Your choice for the final filament trip check box selection probably depends on the local conditions of the way you work. Sometimes it is advisable for the software to turn off the filaments automatically when you quit the RGA application. In other cases, you may prefer that they be left on all the time. You should only adopt this approach if you are sure that the filaments are well interlocked at the hardware level.

The two options for multiplier trips are checked by default. The first turns off the multiplier if the filament is not on. The second automatically turns off the multiplier during a bake on a system with an MKS Remote Vacuum Controller (RVC) or an MKS Cirrus system.

3.4.3 Analyzer



This tab shows the ion source and mass filter configuration properties for each of six possible groups of settings. You select the information displayed by choosing a **Configuration** from the drop down list at the top of the page.

In the example shown the settings relate to the **Base Pressure RGA** configuration in which the electron emission current is 0.39mA and the ion energy is 7eV.

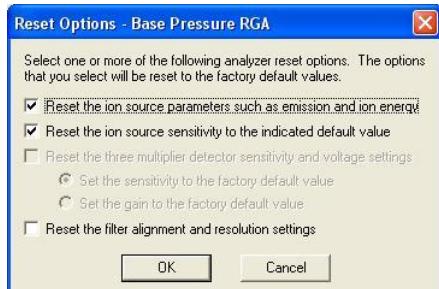
The calibration sensitivity in units of Amps per unit of pressure is shown for the Faraday detector using filament #1.

You can view the sensitivities of the other detector settings by clicking repeatedly on the **More Detectors** icon.

The **Filter Configuration** is shown in the lower panel. There are four integer numbers that set the alignment and resolution at low and high mass.

Click the **Copy to All** button to apply the alignment and resolution settings indicated for the current configuration (Base Pressure RGA in the example shown) to the other five ion source configurations.

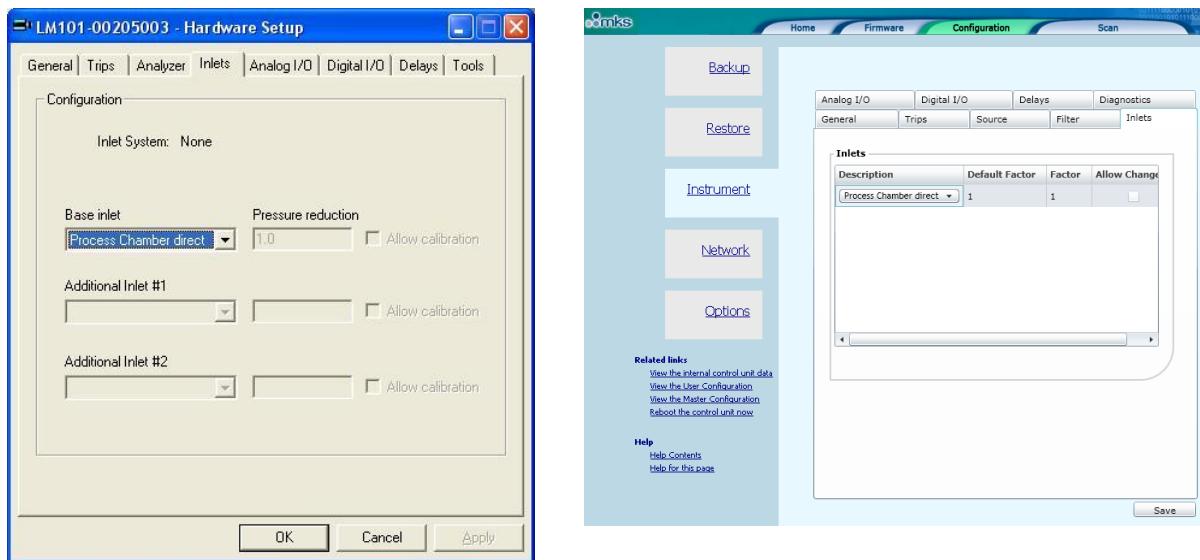
Click the **Reset** button to reset the settings for the current ion source configuration to the factory default values. Click **Reset All** to reset all six ion source configurations to their factory default values. In both cases you can select which features to reset as shown here.



You can individually reset:

The source parameters, such as ion and electron energy.
The basic ion source (Faraday) calibration sensitivity.
The filter alignment and resolution settings.
Where a multiplier is fitted you can reset the multiplier detector sensitivities.
Depending on your choice of options, you may be able to reset either the multiplier sensitivity or gain to the factory default.

3.4.4 Inlets



This tab will only be relevant if you have an RGA with an inlet system. Where this is the case you must configure each inlet so that its inlet factor (pressure reduction factor) is correct. If you obtained the complete system from MKS, you will have been informed what the inlet factors for your system are.

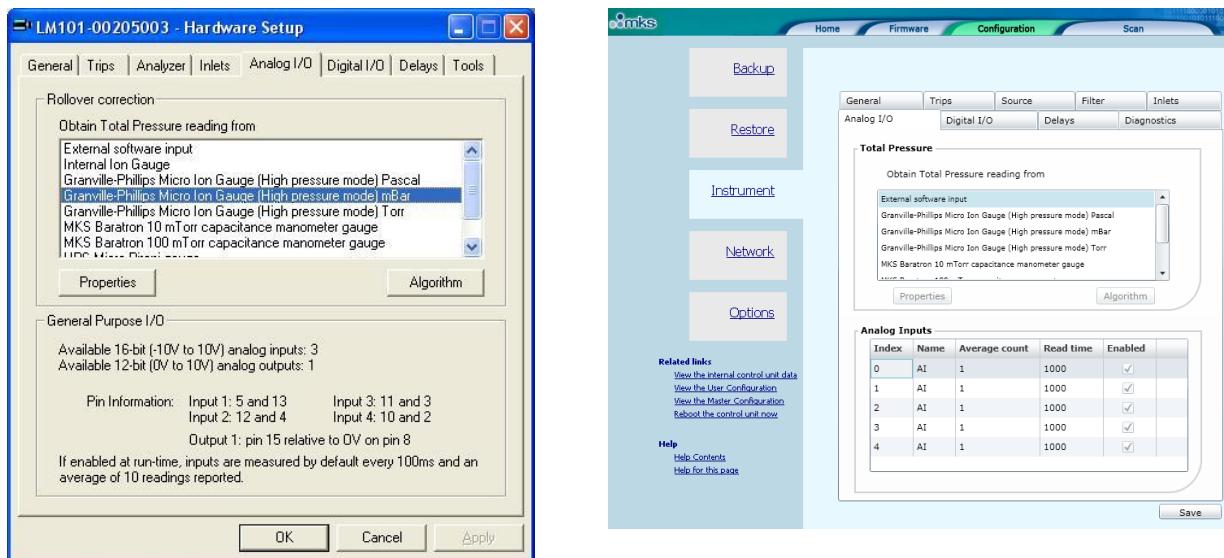
Select an item from the drop down list that describes as closely as possible the inlet that is fitted – for example a ‘x10 orifice’.

In the pressure reduction box enter the actual reduction factor to use, which may be a more precise figure – for example 10.6.

If you want to be able to calibrate the inlet at run-time, check the **Allow calibration** box.

Please be aware that calibrating an inlet requires that you know both the upstream pressure and the ion source pressure of the RGA analyser.

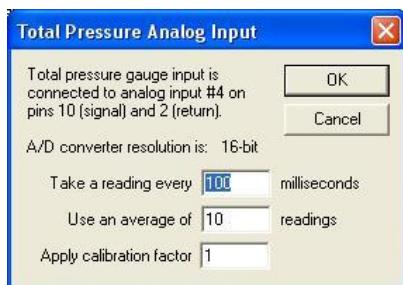
3.4.5 Analog I/O



This tab displays the configuration of the Analog I/O connector on the rear panel of the control unit.

If, as in the example shown, the control unit is one with a pressure gauge attached, select the type of gauge from the list in the top panel.

Note that only HPQ2S RGA's are equipped with an external gauge for rollover correction. All other instruments will show **not applicable** in the gauge type list.



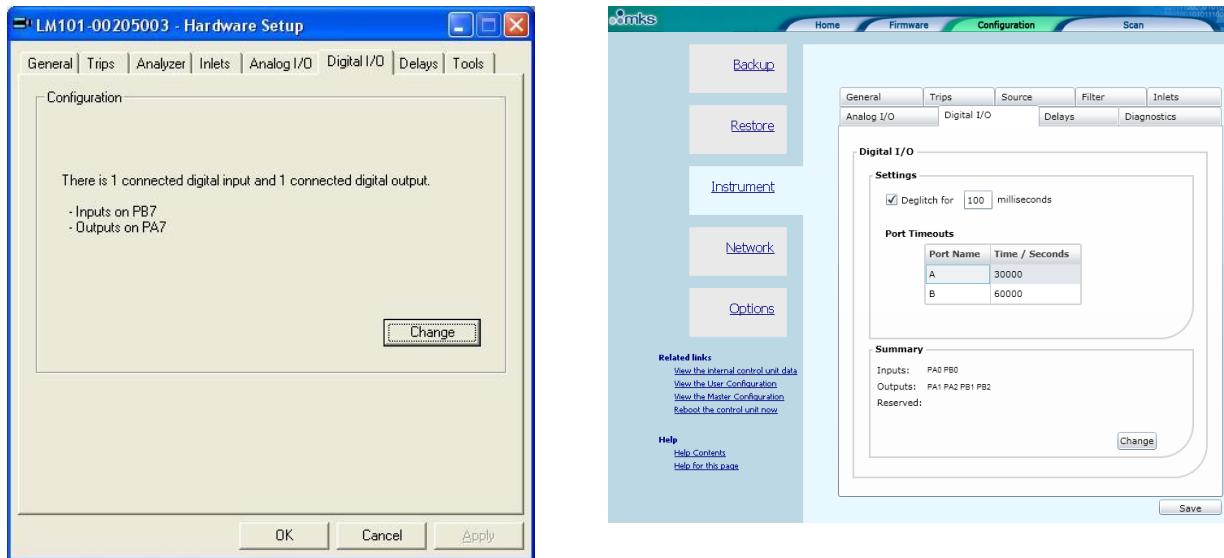
The **Properties** button shows a dialog in which you can change the acquisition frequency/accuracy. The software automatically converts the voltage to a pressure according to the manufacturer's calibration. You can change this calibration with a factor in v5.21 onwards. Values in excess of one increase the pressure relative to the manufacturer's calibration and values less than 1 reduce it.

The dialog also displays the connector pins used by the gauge.

When a gauge is used for rollover correction you can modify or reset the algorithm by clicking the **Algorithm** button. This is an advanced feature that is not described further in this manual. You should only ever use non-default settings if instructed to do so by MKS support personnel.

If you do not have an external gauge, all the four inputs and one output are available for use within your data acquisition recipes. The **General Purpose I/O** panel indicates the pins that can be used to connect I/O to the control unit.

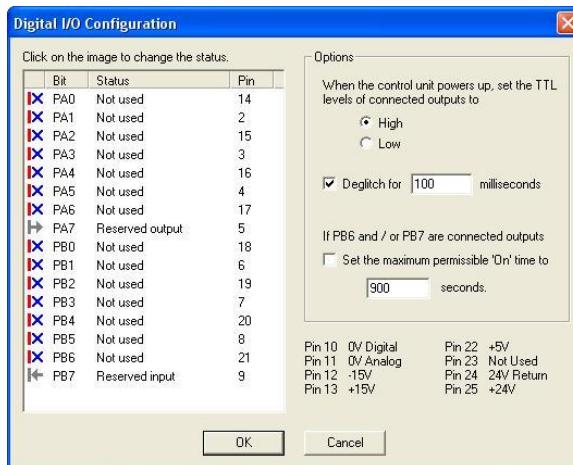
3.4.6 Digital I/O



This tab lists the inputs and outputs that have been enabled on the Digital I/O connector on the rear of the control unit.

By default there are no I/O channels enabled but you can set individual channels to be configured as inputs or outputs by clicking the **Change** button.

This opens a new dialog as shown here.



There are usually sixteen available channels of I/O, although if you have an external gauge on the analog input (as shown in this example), one or more channels may be marked as reserved.

You cycle through the options of **Not Used**, **Input** and **Output** simply by left mouse clicking on the icon in the left-most column of the list.

The pin associated with the channel is indicated in the fourth column. The additional pins are described at the bottom of the dialog.

The **Options** panel has the following features:

You can choose whether the outputs boot high or low – See below.
You can modify the deglitch time – See below.

When PB6 and/or PB7 are configured as outputs, you can optionally set a maximum permissible 'on' time for these outputs only. Typically this is used for the control of a calibration gas sample bottle, in order to ensure that the bottle contents are not inadvertently drained.

The **When the control unit powers up, set the TTL levels of connected output** option is used to determine the state of the digital outputs at switch on. You will usually want to ensure that this corresponds to your 'safe' state, which will depend on the nature of the circuit driven by the TTL output.

Note: Setting an output line in a recipe script to 'False' or zero always sets the TTL level low; setting it to 'True' or non-zero will set the level high. This is true whether the default **On Power-up set output TTL levels** is high or low.

The digital lines, PB6 and PB7 differ from the other lines as they can be configured to revert to the selected power-up state after a predetermined amount of time. This can be configured by checking the **If PB6 or PB7 are connected outputs** box and entering the required time in seconds.

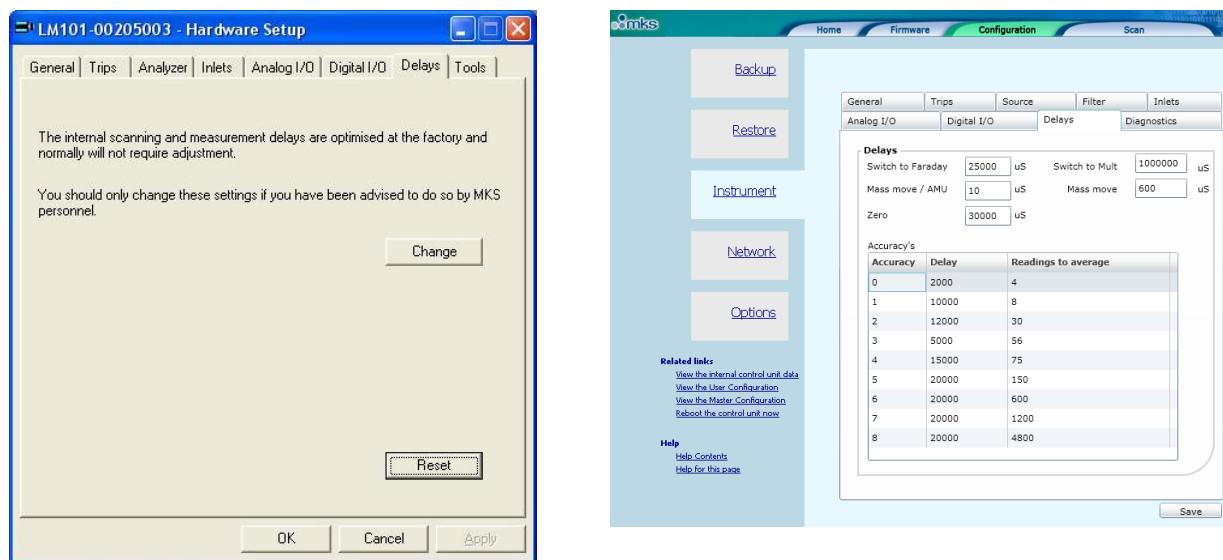
When enabled, the deglitch filter works by monitoring the data line for changes in state. If a change is detected a timer will start, if no further changes of state are detected by the time the timer has reached the deglitch time, the digital input line will change state.

If a change in state is detected before the timer has reached the deglitch time, no changes will be made to the digital input line.

Note: If the digital input is continually changing state at a frequency faster than the set deglitch time, then no changes in state will be reported.

Please read the relevant section of the control unit manual to find out how to wire external hardware to the control unit.

3.4.7 Delays



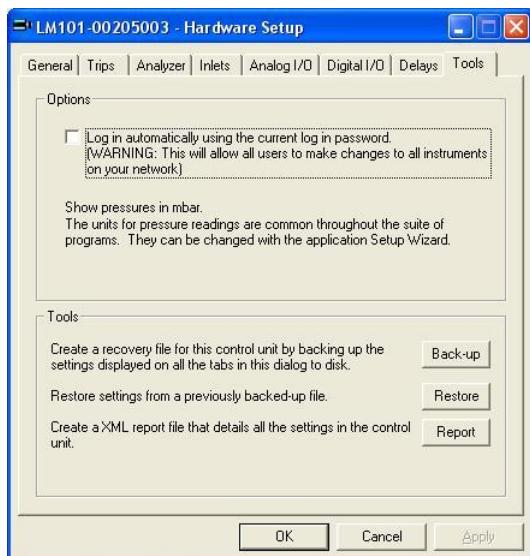
This tab is an advanced feature. The control unit has a table of software delays that control the length of transition states – for example how long to wait when switching between a Faraday and multiplier detector.

You should never normally need to change the delays from the standard factory defaults. However, in exceptional circumstances an MKS support engineer may recommend changes to one or more of these standard settings.

This topic is not covered any further in this manual.

3.4.8 Tools

Using the features of this tab you can set options that apply to the application itself and you can perform tasks such as back-up and restore of control unit settings.



If you want to bypass the password screen you can set this option using the checkbox.

Usually in the context of Process Eye or EasyView you do not have a choice of pressure units – they default to the option chosen in the main set-up.

The tools available are:

Back-up – save all the control unit settings to a file*.

Restore – restore all the control unit settings using a previously saved back-up*.

Report – create a complete documented report on the current settings. You can save this to disk and/or view it using your browser.

Please note that the back-up and report options act on the settings currently displayed on the pages of the dialog. If you have made changes to the dialog and you do not commit these changes to the control unit by clicking the OK button, the action will not reflect the true state of the control unit.

* These tools are available via the instrument's home page for Microvision and eVision2. Please see the online help for details.

3.4.9 Commit Changes

You commit any changes to the control unit by clicking the **OK** button. All the configuration settings are downloaded to the control unit and it will then reboot. If you want to leave the control unit unchanged, click **Cancel**.

6. Using EasyView

Overview

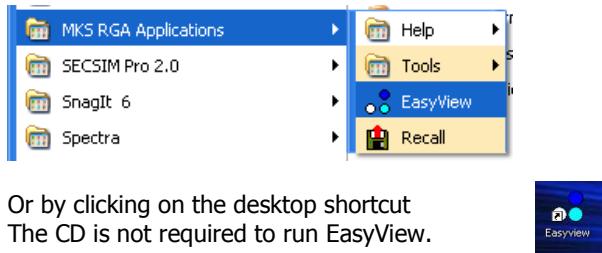
All the standard view modes are available including Analog Scan, Barchart, Peak Jump and Leak Check. These modes are fully interactive allowing changes to the scanning parameters to be made in real-time.

There is also the ability to perform a Disk Store, where the scan data is saved to disk for viewing at a later date using the Recall program.

The following pages describe the main areas of interest to get you started using EasyView. The later sections, describe each area in greater detail as well as explaining the Diagnostics and Calibration modes available.

6.1 Starting EasyView

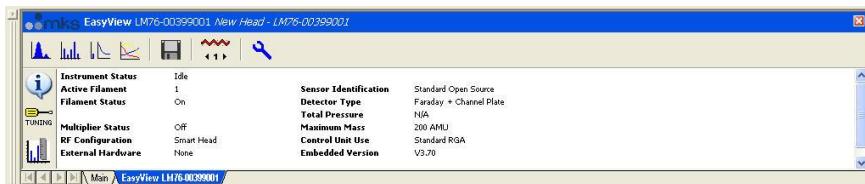
To start the main EasyView program, click on **Start/Programs/MKS RGA Applications/EasyView**.



Or by clicking on the desktop shortcut
The CD is not required to run EasyView.



The EasyView information page now loads giving information on the currently connected head.



6.2 Toolbars

Each mode of operation can be accessed through the tool bar.



Use the following buttons to start or stop a scan mode, or to access the other functions of the program. For detailed information on each function, see the relevant section shown in brackets.



Analog scan mode. (7.3)



Barchart scan mode. (7.4)



Leak Check scan mode. (7.5)



Peak Jump scan mode. (7.6)



Disk Store. (7.7)



Filament Select.

Use this button to toggle between the filaments.



Filament Status.

Red – Filament ON, Blue – Filament OFF.



Run Diagnostics.

Performs a diagnostics check on the RGA head.



Show Information Page.

This button switches from the Status display to the Information display.



Tuning Mode.

Enter the instrument tuning mode.



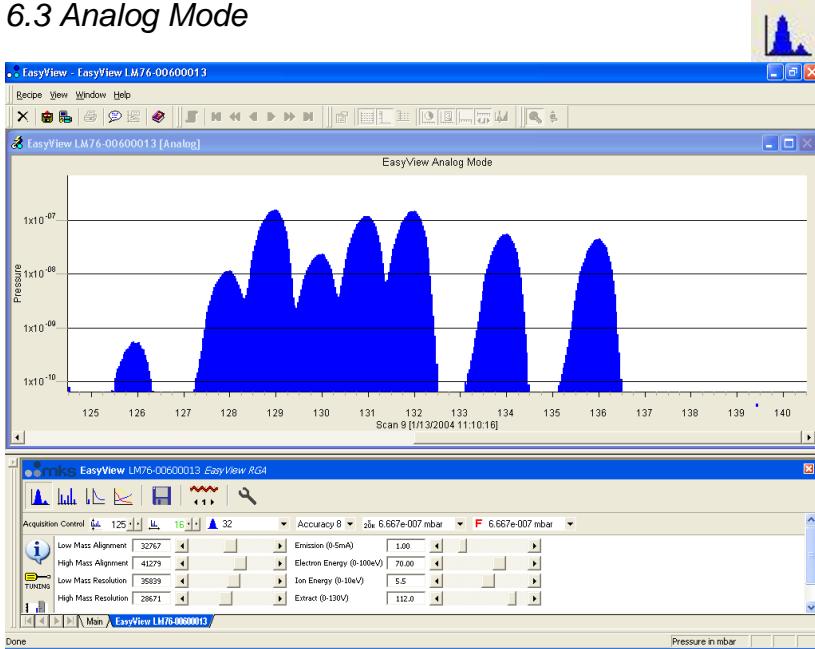
Calibration Mode.



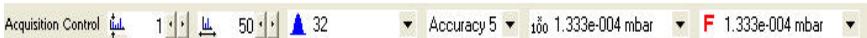
Peak Jump Settings.

Only visible when in Peak Jump mode.

6.3 Analog Mode



The Analog view is displayed and the interactive analog control toolbar will appear in the status window.



Use this toolbar to change the scan parameters, each of the functions are explained below.



Start Mass control.

To change the start mass of the scan, either enter a number directly into the box, or click on the arrows to increase or decrease the mass number.

Note that the first mass cannot be less than 1 and that the first mass plus the mass span, cannot exceed the maximum mass allowed by the control unit.



Mass Span control.

To change the mass span of the scan, either enter a number directly into the box, or click on the arrows to increase or decrease the mass span.

Note that the first mass plus the mass span cannot exceed the maximum mass allowed by the control unit.



Accuracy Control.

Scan accuracy determines the amount of averaging carried out for each reading.

A high accuracy number provides a clean scan but increases scan time.

The accuracy ranges available are from 0 to 8.



Points per peak control.

The number of measurements each full mass is divided into 8,16 or 32.

The higher the number of points-per-peak selected, the better the representation of peak shape. However, scan time and the amount of data generated will increase. If the data is to be imported into Excel for instance, choose a lower value.



Electronic Gain control.

The electronic gain of the pre-amplifier can be changed by selecting one of the values from the drop down list.

Depending on the type of instrument, the allowed values are 1,100 and 20000.

The higher the gain selected, the smaller the partial pressure that can be measured, this may cause peaks of a higher partial pressure to saturate.

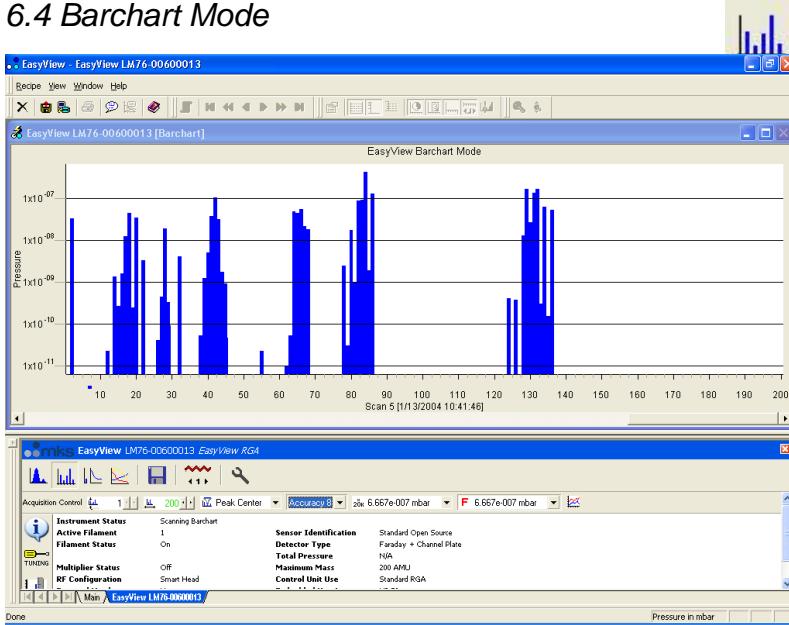
F 1.333e-004 mbar ▾

Detector control.

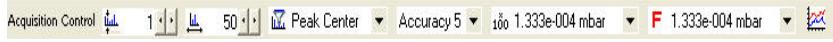
The detector type used for the scan can be changed.

Depending on the type of instrument, the options are Faraday, Multiplier 1, Multiplier 2 and Multiplier 3. Multiplier 1, 2 and 3 refer to the same physical detector, but using three separate calibration values.

6.4 Barchart Mode



The Barchart view is displayed and the interactive Barchart control toolbar will appear in the status window.



Use this toolbar to change the scan

parameters, each of the functions are explained below.



Start Mass control.

To change the start mass of the scan, either enter a number directly into the box, or click on the arrows to increase or decrease the mass number.

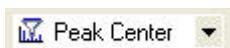
Note that the first mass cannot be less than 1 and that the first mass plus the mass span, cannot exceed the maximum mass allowed by the control unit.



Mass Span control.

To change the mass span of the scan, either enter a number directly into the box, or click on the arrows to increase or decrease the mass span.

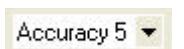
Note that the first mass plus the mass span cannot exceed the maximum mass allowed by the control unit.



Scan Mode control.

The scan mode is the method used to report the peak height.

The options are - Peak Centre, Peak Max or Peak Average.

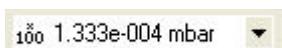


Accuracy control.

Scan accuracy determines the amount of averaging carried out for each reading.

A high accuracy number provides a clean scan but increases scan time.

The accuracy ranges available are from 0 to 8.



Electronic Gain control.

The electronic gain of the pre-amplifier can be changed by selecting one of the values from the drop down list. Depending on the type of instrument, the allowed values are 1,100 and 20000.

The higher the gain selected, the smaller the partial pressure that can be measured, this may cause peaks of a higher partial pressure to saturate.



Detector control.

The detector type used for the scan can be changed.

Depending on the type of instrument, the options are Faraday, Multiplier 1, Multiplier 2 and Multiplier 3. Multiplier 1, 2 and 3 refer to the same physical detector, but using three separate calibration values.

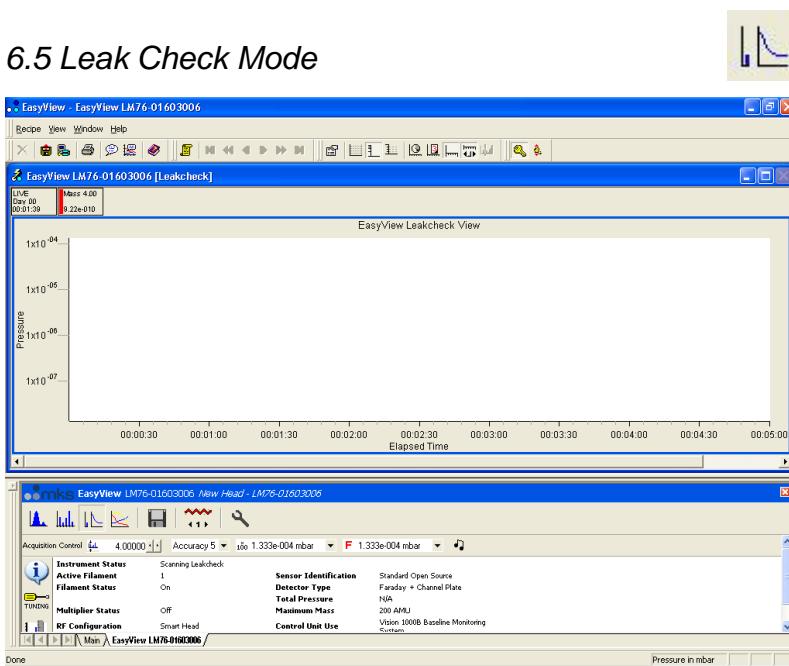


Add Trend control.

The add trend button adds a default trend in addition to the Barchart view.

This trend can be edited in the same way as any normal trend view see Section 7 – Changing/adding Views

6.5 Leak Check Mode



The Leak Check view is loaded and the interactive Leak Check control toolbar appears in the status window.

Acquisition Control 4.00000 Accuracy 5 $1.333e-004$ mbar F 1.333e-004 mbar Use this toolbar to change the scan parameters, each of the functions are explained below.

4.00000 Probe Mass control.

To change the probe mass of the scan, either enter a number directly into the box, or click on the arrows to increase or decrease the mass number.

Note that the first mass cannot be less than 1 and that the first mass plus the mass span, cannot exceed the maximum mass allowed by the control unit.

Accuracy 5 Accuracy control.

Scan accuracy determines the sampling amount carried out on each reading.

A high accuracy number provides a clean scan but increases scan time.

The accuracy ranges available are from 0 to 8.

$1.333e-004$ mbar Electronic Gain control.

The electronic gain of the pre-amplifier can be changed by selecting one of the values from the drop down list.

Depending on the type of instrument, the allowed values are 1,100 and 20000.

The higher the gain selected, the smaller the partial pressure that can be measured, this may cause peaks of a higher partial pressure to saturate.

F 1.333e-004 mbar Detector control.

The detector type used for the scan can be changed.

Depending on the type of instrument, the options are Faraday, Multiplier 1, Multiplier 2 and Multiplier 3. Multiplier 1, 2 and 3 refer to the same physical detector, but using three separate calibration values.

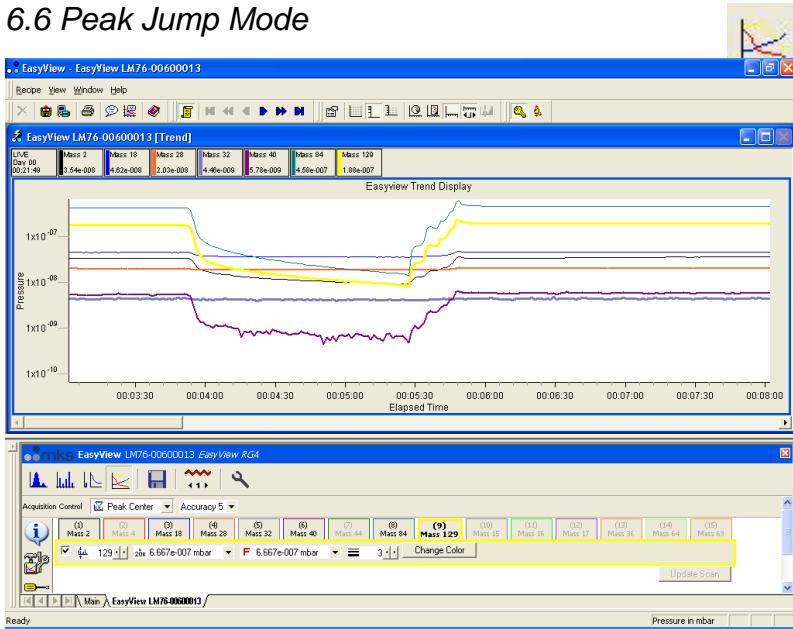
Audio control. Not support on certain sensor configurations.

Switches the audio tone on or off.

The tone changes in frequency as the measured peak height changes.

This is a useful feature if you are unable to see your monitor while leak checking.

6.6 Peak Jump Mode



The Peak Jump view is loaded and the interactive Peak Jump control toolbar appears in the status window.



Use this toolbar to change the scan parameters, each of the functions are explained below.



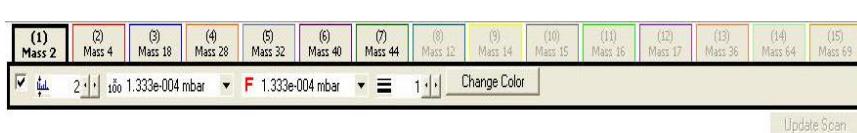
The scan mode is the method used to report the peak height.
The options are - Peak Centre, Peak Max or Peak Average.



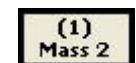
Scan accuracy determines the sampling amount carried out on each reading.
A high accuracy number provides a clean scan but increases scan time.
The accuracy ranges available are from 0 to 8.



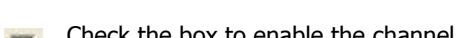
Use this button to open the Peak Jump settings window shown on the next page.



Settings for each of the 15 channels can be edited using this toolbar.



Click on the channels tab to edit the settings for that particular channel.



In the above example only channels 1 to 7 are enabled, channels 8 to 15 are disabled.



Set the particular channels scan mass.

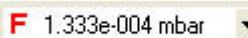
Note that the mass cannot be less than 1 and cannot exceed the maximum mass allowed by the control unit.



The electronic gain of the pre-amplifier can be changed by selecting one of the values from the drop down list.

Depending on the type of instrument, the allowed values are 1,100 and 20000.

The higher the gain selected, the smaller the partial pressure that can be measured, this may cause peaks of a higher partial pressure to saturate.



Detector control.

The detector type used for the scan can be changed.

Depending on the type of instrument, the options are Faraday, Multiplier 1, Multiplier 2 and Multiplier 3. Multiplier 1, 2 and 3 refer to the same physical detector, but using three separate calibration values.



Line Thickness control.

The thickness of the plotted line can be changed to aid visibility

Change Color

Colour control.

The colour of the plotted line can also be changed,
select a colour then click <OK> to apply it to the channel.



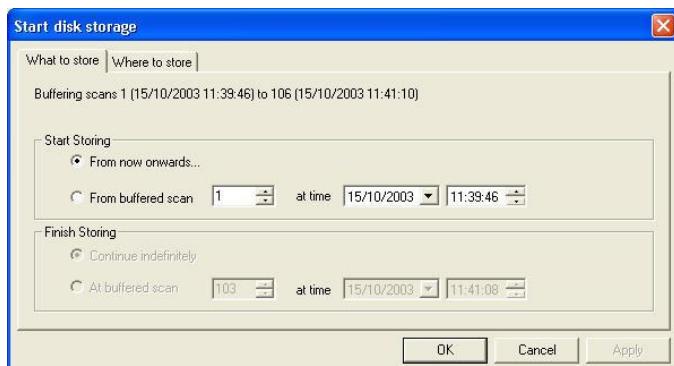
Update Scan

Changes made to the channels properties are not immediately made to the scan. When all changes required have been made click <Update Scan> The new settings will then be applied to the current scan.

6.7 Disk Store



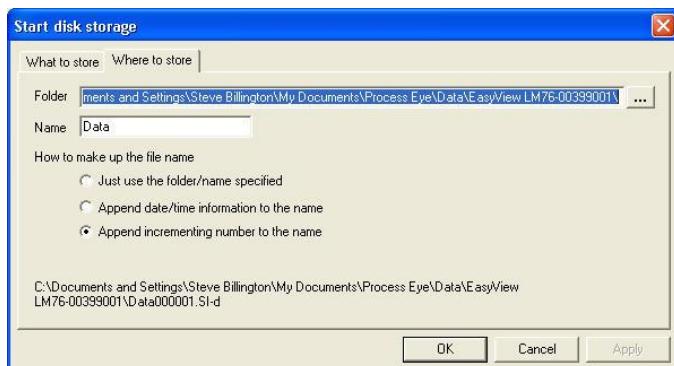
Disk Store is available in the Peak Jump, Analog and Bar Chart modes and can be accessed by clicking the button shown.



What to store options:

"From now onwards" stores each buffered scan to disk until stopped by the user.
"From buffered scan" allows *start* and *end* scan configuration.

Note: The buffer is reset if any changes to the current scan are made, otherwise the last 500 scans are stored in the buffer. If disk storage is started at a buffered scan, then it is possible to stop disk storage at a defined buffered scan as well.



Where to store options:

"Folder" enter the path, or browse to the folder where the scans are to be stored. The default path is:

\..\EasyView\Data\EasyView "Head Serial Number

"Name"

Enter a name for the saved data file, by default this is "data" but it can be anything you choose.

As well as the name, the file can be amended with other information:

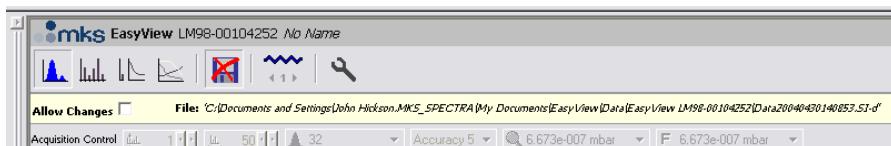
"Just use the folder name specified" will create the file "data.SI-d".

"Append date/time information to name" adds date and time information to the file and would create the file "DataYYYYMMDDHHmmSS.SI-d".

Where YYYY is the current year, MM is the current month, DD is the current day, HH is the current hour, mm is the current minute and SS is the current second.

"Append incrementing number to the name" adds a sequential number to the name and would create the following file "Data000001.SI-d", the next would be "Data000002.SI-d" and so on for each file.

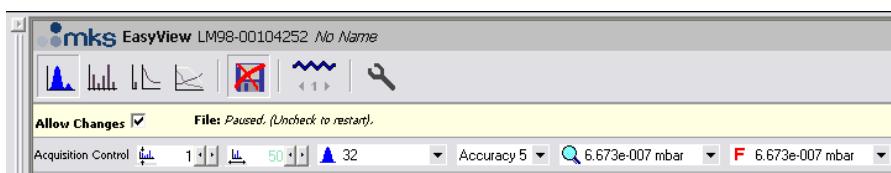
While storing to disk, the Disk Store toolbar will be visible in the status window.



Pauses the disk store and re-enables the scan toolbar.

Notice that the disk store icon is no longer available and the path to the disk store file is displayed.

Checking the "Allow Changes" box,

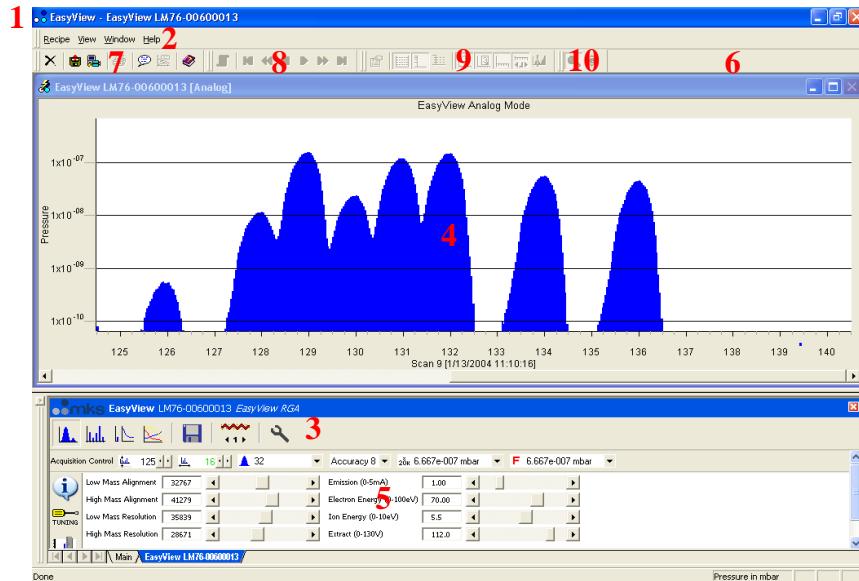


You can then change the scan properties, un-check the "Allow Changes" option and continue with the Disk Store without having to run through the "Start Disk Storage" dialog.

Note: The name of the file will still change.

6.8 The Main EasyView screen

The main EasyView screen is where most of your time will probably be spent. The picture shows the main screen in Analog scan mode.



1 Title Bar

The Title Bar shows the application name, EasyView. The Close, Minimize and Maximize button on the right-hand side of the title bar operate in the normal manner.

2 Menu Bar

EasyView is no different to other Windows programs, all the available function are available via the menu bar.

3 EasyView Control Icons

EasyView can be controlled from these icons, use them to select the required mode.

4 Views Windows

The Views windows are where the data acquired in EasyView is displayed. Any number of trend windows many be added to the default views.

5 EasyView Control Window

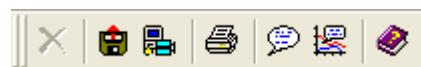
The EasyView control window contains all the controls to run EasyView. From here select the scan mode, control disk store, set the control unit parameters, calibrate and run diagnostics

6 Toolbars

The Toolbars appear as one row of buttons below the menu bar and immediately above the recipe list and views windows. The twenty-five buttons consist of four separate toolbars. Each of the toolbars may be hidden by selecting <View / Toolbars> from the menu bar and un-checking those you wish to hide. The default setting is visible for all four toolbars.

7 Default Toolbar

The first seven buttons make up the Default Toolbar.



The "Close" recipe button is used to halt a recipe that is currently running. The Close Recipe button will not be available unless a recipe is running and the Status window has focus (click in the status window to give it focus). Also, the recipe needs to have been configured to include the ability to end the recipe prematurely.

The "Run Recall" button will run the recall program to allow review of stored data

The "Run Software Setup" button will launch the software setup wizard to allow changes to the installation

The Print button will print the data from the active data window.

The "Add Annotation" button can be used to add annotation to a trend at a particular time.

The add annotation at selected time button is used to mark a place on a trend

Click on the "Help" button to open the EasyView help file. Use EasyView Help just as you would any other Windows help document.

8 Scan Navigation Toolbar



These seven buttons control the viewing of live and stored data.

When the Historic Data button is not depressed, the active continuous mass scan view is displaying the live data currently being acquired. While the button is depressed, the continuous scan window will display historic data. New data is still being acquired in this historic mode, you will see the total number of scans figure increasing while the current scan number remains the same.

The six navigation buttons will only become available when historic data is being viewed, e.g. The Live Data button is not depressed.

Click on the "First Scan" button to view the oldest scan stored in memory.

Click on the "Jump Back" button to view the scan 10 scans previous to the current one being viewed.

The "Previous Scan" button allows you to view the last scan.

The "Next Scan" button allows you to view the next scan.

Click on the "Jump Forward" button to view the scan 10 scans subsequent to the current one being viewed.

Click on the "Last Scan" button to view the newest scan acquired in the current recipe run.

9 Chart Display Toolbar



These nine buttons that make up the Chart Display Toolbar control certain aspects of the active recipe windows.

Click on the "Properties" button to display the settings for the currently active recipe view.

Click on the "Grid" button to display a Y-axis grid in the currently active view window. Default is disabled.

Click on the "Log/Lin" button to switch between a linear and logarithmic Y-axis. Default is linear.

Click on the "Y-axis Minor Ticks" button to enable the display of minor ticks on the Y-axis. Default is major ticks.

Click on the "Time" button to switch between real and elapsed time on the X-axis from the start of the recipe. Default is elapsed time.

-  Click on the "Days" button to display the date and time on the X-axis. Default is time only.
-  Click on the "X-axis Minor Ticks" button to enable the display of minor ticks on the X-axis. Default is major ticks.
-  Click on the "Add Scroll Bar" button to add a scroll bar to the X-axis. Default is no scroll bar.
-  Click the "Add Cursor" button to add a measurement cursor to the active Bar chart display. The cursor can be moved to the required mass and will display the mass number and partial pressure. As many cursors as are required can be added.

10 Trend Display Toolbar

These two buttons constitute the Trend Display Toolbar



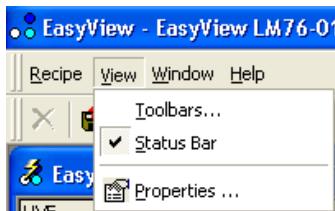
-  The "Key Display" button controls the display of the key table for the active trend views. The button will not be available if no trend view is available.

-  The "Key Mode" button changes the key table view between vertical and horizontal views.

Customizing Toolbars

You can customize the toolbars as required, you can choose which Toolbars are visible, or you can create your own toolbars with your own choice of buttons.

From the view pull down menu, select <Toolbars>.



This will bring up the toolbar dialog. Check the box for the toolbars you wish to have displayed. Checking the <Cool Look> check box will change the appearance of the toolbars.

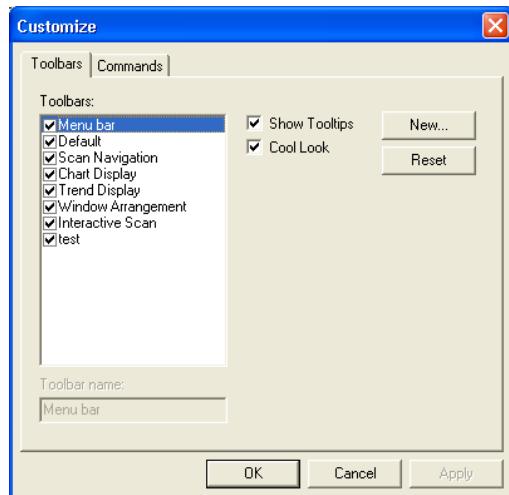


To create a new toolbar, click on the <New> button.

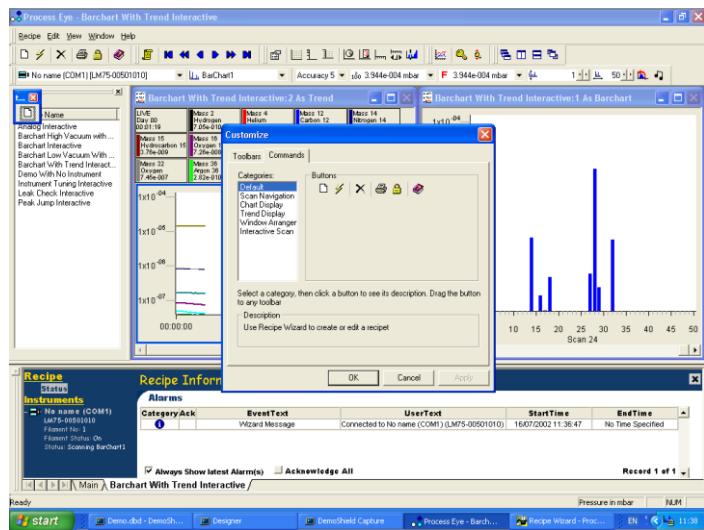


Give the new Toolbar a name and click <OK>.

This will create a blank Toolbar that you can then customize. From the toolbar dialog box click on the <Customize> button to bring up the customize dialog.



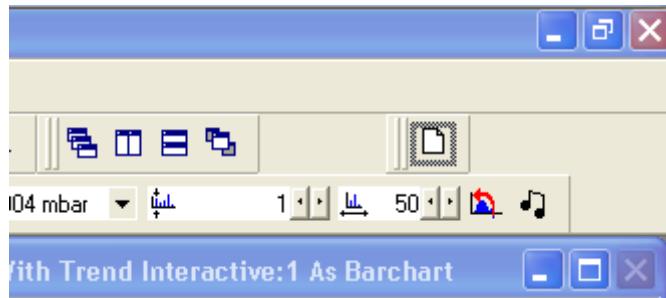
Click on the <Command> tab to see the buttons currently assigned to the new Toolbar you have created.



You can then drag one of the buttons (in this case the "Create New Recipe" button) onto the toolbar.

You can add as many buttons are you like from different toolbars. To save this new Toolbar, click<OK>.

This new Toolbar can then be positioned next to the other toolbars.



Adding Annotations

Time stamped annotations can be added to a trend in two ways:

The first is to click on the "Add Annotation" button which will cause the

"Annotations" dialog to appear.



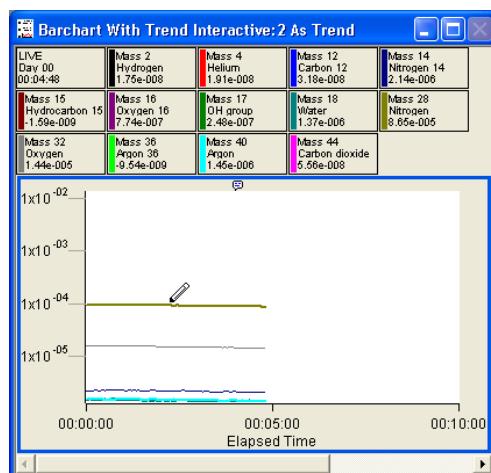
Here you can specify a time for the annotation to appear on the trend, add the text you wish to appear in the "Notes" field.

The second way to add an annotation is to click on the "Add annotation

at selected time" button.

The screen cursor will change to a pen, select the point on the trend

that you want to add the annotation and



The annotations dialog appears again, allowing you to add text to the annotation, with the date and time determined by the point at which the annotation was added to the trend.

Each annotation added is marked by a symbol along the top of the trend, moving the cursor over this symbol causes the entered text to be displayed as a tool tip.

You may add as many annotations as you wish, these will also be visible when using Recall.

trend, moving the cursor over this symbol

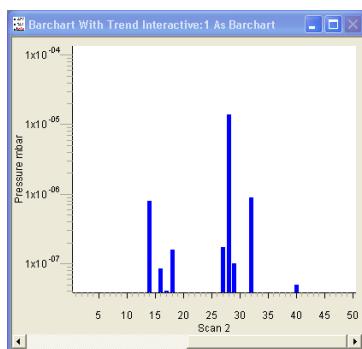
7. Changing/Adding Views

The RGA data gathered by the instrument can be displayed on screen in a number of different views.

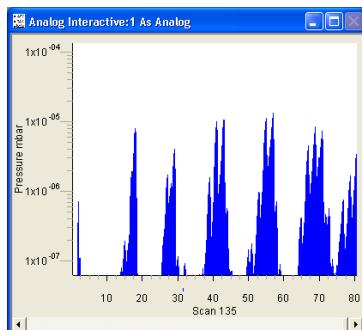
To modify any view manually, highlight the view and either right-click, or click on the properties button on the chart display setup toolbar.



View types

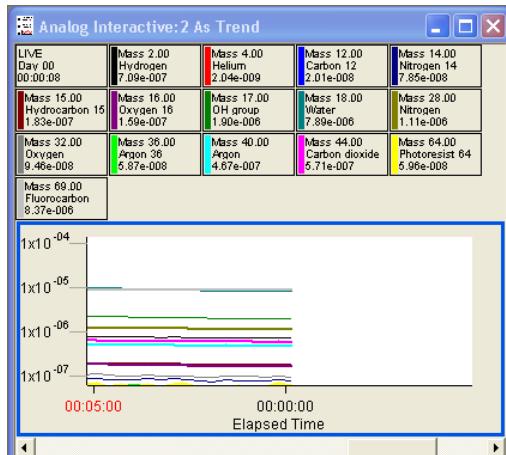


"Swept Measurement" view, this is a display of partial pressure versus mass. Bar chart shown below, where there is a single bar shown per mass.



Another form of the swept measurement view is the Analog view, where there are a number of bars per mass, giving a pseudo-analog view.

"Trend" view where a variable versus time can be plotted.

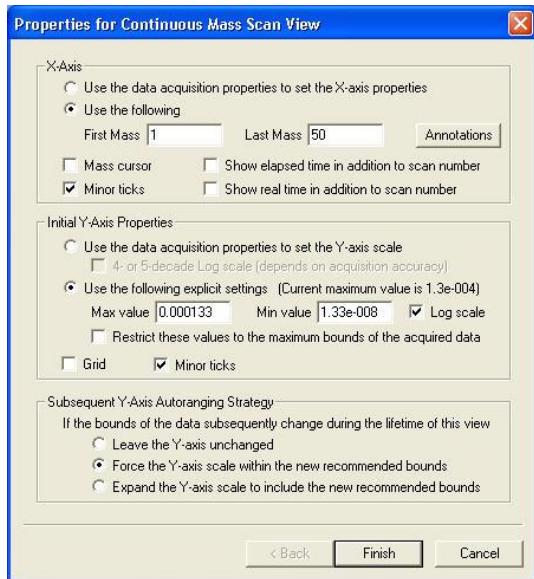


This type of view is more flexible as any user variables can be plotted.

7.1 Swept Measurement Properties Settings

The following section outlines the various changes that can be made to views using the "Properties for Continuous Mass Scan View" dialog.

We will look at each function in turn.



X-Axis

Use the data acquisition properties to set the X-axis properties

Creates a view with the X-axis properties governed by the measurement on which the view has been based.

For example, if the view was based on a Bar chart scan, measuring from mass 5 up to mass 45 then this view will show mass 5 to mass 45 along the X-Axis.

Use the following

Bases the X-axis range on the values entered in the text boxes, with the following limitation:

Although you can choose not to display masses that are being measured, you cannot choose to display masses that are not being measured.

For example, you create a Bar chart measurement scanning from mass 5 to 45, you can base a view displaying from mass 10 to 40, but not from mass 5 to 50. If this is attempted, the view will revert to displaying the measurement's range.

Minor Ticks

Displays minor ticks on the X-axis.

Show elapsed time in addition to scan number

Displays the elapsed time from the start of the recipe.

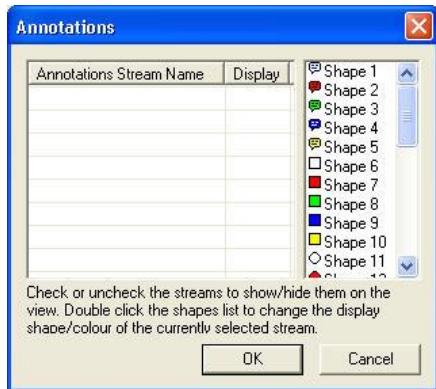
Show real time in addition to scan number

Displays the real time, governed by the PC clock.

Note: Both the above options cannot be enabled at the same time.

To edit the Annotations icon click on <Annotations>

Annotations dialog



Any annotation streams defined in the recipe will be listed, check the display box to show the annotation on the view. To change the icon displayed on screen, select one of the others from the list.

Click <OK> to return to the properties page

Initial Y-axis Properties

In a swept measurement, the Y-axis is always shown as pressure, the units of which are determined in the EasyView preferences, Section 13 - Preferences.

Use data acquisition properties to set Y-axis

Creates a view with the Y-axis properties governed by the measurement on which the view is based.

4- Or 5- decade log scale

Changes the Y-axis from a linear scale with its origin at zero, to a logarithmic scale, with a minimum on which is dependant on the accuracy of the measurement. The higher the accuracy, the lower the minimum pressure will be displayed.

Use the following explicit settings

Allows manual entry of the maximum and minimum displayed pressures.

The display can be either linear or logarithmic determined by the check box.

Restrict these values to the maximum bounds of the acquired data Causes the Y-axis maximum pressure setting, to be governed by the maximum pressure obtained from the measurement associated with the view.

Note: You cannot display zero or negative values in logarithmic mode.

Grid

Displays a horizontal grid, aligned with the ticks of the Y-axis.

Minor Ticks

Displays minor ticks on the Y-axis.

Subsequent Y-Axis Auto-Ranging Strategy

If a view's Y-axis limits are based on an "interactive" measurement, these limits can be changed during the lifetime of the view.

Three options determine how the axis will react to changes in the measurement such as electronic gain range, or detector changes for example.

Leave the Y-Axis unchanged

The Y-Axis settings remain unchanged when the measurement changes. The settings will be based on the measurement when the view is loaded.

Force the Y-Axis scale within the new recommended bounds

Changes the Y-Axis settings to match the new measurement settings.

Expand the Y-Axis scale to include the new recommended bounds

Change either the maximum or the minimum Y-axis settings to incorporate the new settings.

For example:

If you increase the electronic gain, the minimum displayed pressure would be changed to match the smaller pressure that could now be measured. The maximum pressure displayed would remain the same. If the electronic gain was then reset to its previous value, the Y-Axis would not change.

Once the changes to the view settings are complete, the view can be saved. Click on the <Next> button to bring up the "Save View" dialog box.

7.2 Trend View Properties Settings

Trend views

A trend view can be associated with any measurement. Along with the RGA data, it is also possible to display signals from the analog / digital inputs and other user variables. The only limitation is that the X-axis is always time.

Adding a Trend view

To add a trend view simply click on the new trend button on the



EasyView control page.

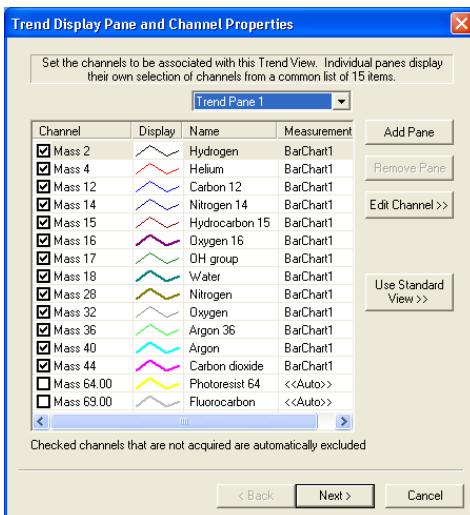
Alternatively select <New Trend Window> from the <Window> pull down menu



The first dialog displayed is the "Trends Display Pane and Channel Properties".

By default, 13 of the 15 masses are enabled, but you can enable and disable channels by checking the box next to the channel.

Clicking on the "Use standard view" will set the channels to be the same as those in the default trend.

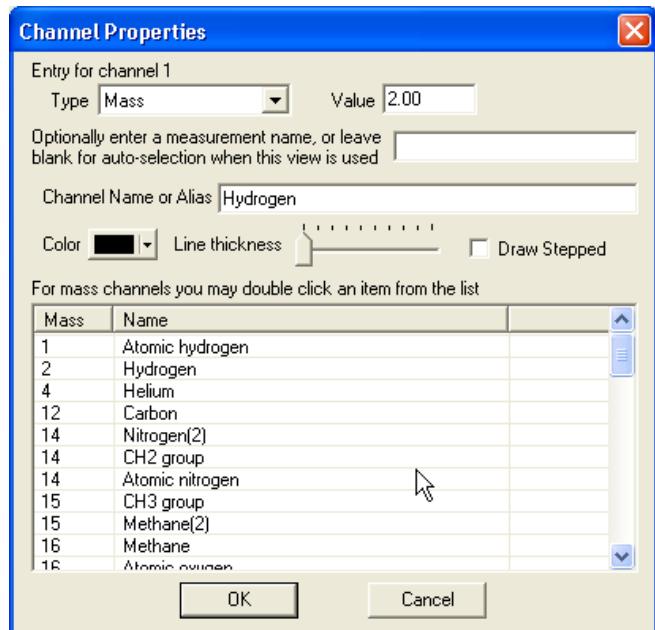


The list of common gases can be edited to suit your needs, see Section 12 – Preferences for details.

Editing a Trend channel

You can edit a channel by either double-clicking it, or by highlighting the channel and then clicking the "Edit channel button".

This displays the "Channel Properties" dialog, which allows set-up of each channel independently.
The Channel Properties options are explained below.



Type

"Mass" refers to one of the partial pressure

Type Mass

measurements.

Editing a mass channel

If "Mass" is selected as the channel type there are a number of ways of editing the channel.

One way is to select one of the pre-defined channels in the selection table.

Mass	Name	
1	Atomic hydrogen	
2	Hydrogen	
4	Helium	
12	Carbon	
14	Nitrogen(2)	
14	CH ₂ group	
14	Atomic nitrogen	
15	CH ₃ group	
15	Methane(2)	
16	Methane	
16	Atomic oxygen	

Clicking on one of the lines will set the mass value and channel name.

Value Alternatively, you can type in the value of the mass you wish to display in the "Value" text box.

Channel Name or Alias

Then type the name that you wish to appear on the trend key in the "Channel name or alias" text box.

If you leave this box blank, the channel name will be displayed as "Mass ???.???" where "???.???" is the value entered in the "Value" text box.

The measurement name is the name of the measurement that you want to use to provide the partial pressure data. If the box is left blank, the measurement selection will be "Auto".

Optionally enter a measurement name, or leave blank for auto-selection when this view is used

This does not mean that the best data will be selected, only that the software will look for a mass with the value entered for each measurement in the measurement list. The first measurement that contains this mass value will be the one that is used.

For example:

You have two Bar chart measurements, Bar chart 1, that is a mass 1 to 50 Faraday measurement and Bar chart 2, which is a mass 1 to 100 multiplier measurement.

If the channel has a mass value of 4.00, the data would be taken from Barchart1 because this is the first measurement that contains a mass with a value of 4.00.

This will be true, even if the peak height on mass 4 is so small that it is lost in the noise level and mass 4 in multiplier is a good stable peak.

If the value is mass 84 the data would be taken from Barchart2, even if the peak is so large it is off-scale. This is because Barchart2 is the first measurement that contains mass 84.

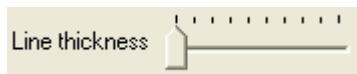
If the measurement name entered is not a valid measurement name in the current recipe, then the measurement selection defaults to auto.

Editing the channel display



To change the colour of a trend line, click on the "Colour" list box.

This will bring up a standard Windows colour selection dialog, where you can choose a new colour.



To change the thickness of the displayed line, move the slider on the "Line Thickness" control.

Moving the slider to the right increases the thickness.

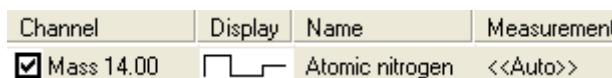
Moving the slider to the left decreases the thickness.



The "Draw Stepped" check box can be used when displaying digital information on a trend.

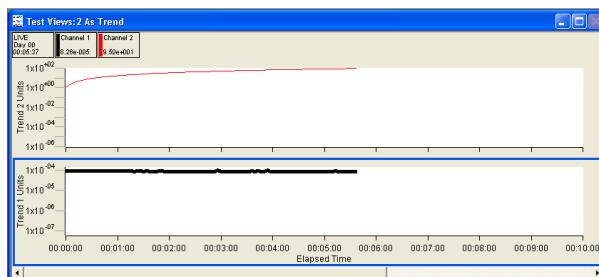
Instead of each point on the trend being joined by a straight line, the points are joined only by horizontal and vertical lines.

The data is forced to be a value of either zero or one. This feature is particularly useful for displaying digital channels on a trend.



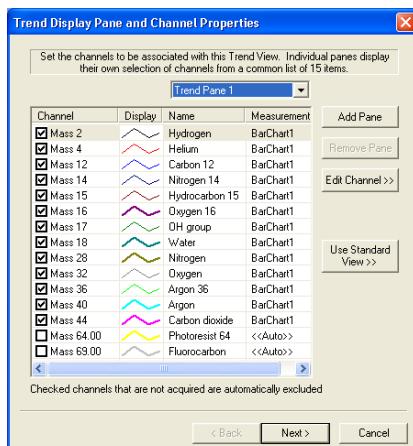
Adding a Trend pane

Although you cannot define multiple Y-Axis scales to allow display of different data on the same trend, you can create multiple trend panes, which allow you to display a number of different Y-Axis on the same trend.



This is a 2-pane trend with channel 1 displayed on trend pane 1, with its own measurement units, and channel 2 displayed on trend pane 2 with different measurement units.

On the "Trend display pane and channel properties" dialog, click on the <Add pane> button to add a new pane.



The settings for each pane can be modified. Select the pane that you wish to edit from the Trend Pane Pull-down list box.

The two-pane view at the start of this section was created in the following way.

Trend Pane 1			
Channel	Display	Name	Measurement
<input checked="" type="checkbox"/> User defined		Channel 1	UserMeasure
<input type="checkbox"/> User defined		Channel 2	UserMeasure

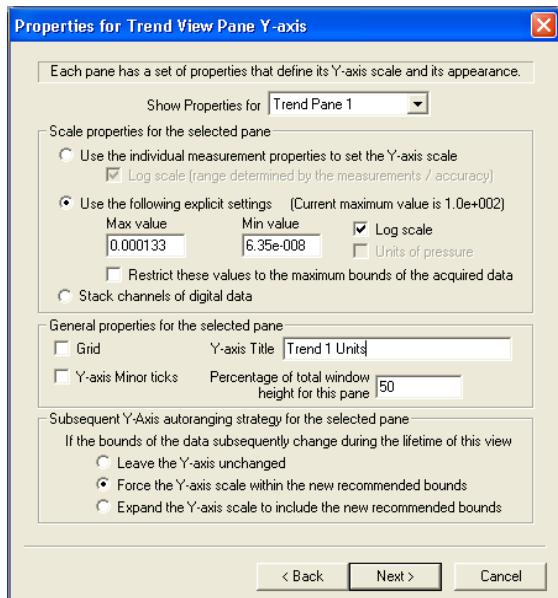
Channel 1 was enabled on trend pane 1

Trend Pane 2			
Channel	Display	Name	Measurement
<input type="checkbox"/> User defined		Channel 1	UserMeasure
<input checked="" type="checkbox"/> User defined		Channel 2	UserMeasure

Channel 2 was enabled on trend pane 2

Configuring the Trend's Y-Axis

Once the channels have been set, click on the <Next> button causing the "Properties for Trend View Pane Y-axis" dialog to appear.



Show Properties for **Trend Pane 1**

Each trend pane can have a different Y-Axis setup. To set up each pane, select the pane you want to edit from the pull-down list box.

Y-Axis Scale Properties

The scale can be set in a number of ways.

- Use the individual measurement properties to set the Y-axis scale
 Log scale (range determined by the measurements / accuracy)

By selecting the above option, the scale will be defined by the measurements that the displayed channels use. E.g. full scale on the axis will be equal to the full-scale pressure of the measurement.

Use the following explicit settings

Checking the “Use the following explicit settings” option allows the maximum and minimum limits on the Y-axis to be defined manually.

Max value

0.000133

Enter the maximum and minimum values you wish to display in the text fields.

Min value

6.35e-008

Log scale

To display a Log scale, check the box.

Note: The software cannot display negative numbers or zero when set to Log scale.

If the “Units of pressure” check box is enabled, the axis will change scale if the pressure units are changed in the preferences.

Units of pressure

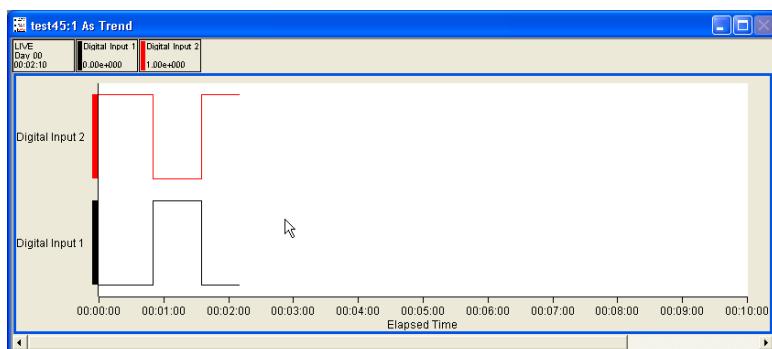
Restrict these values to the maximum bounds of the acquired data

By checking the above option, the scale is limited by the maximum limits of the measurements being used.

For example, if the only data to be displayed is mass channels from Barchart1, the limit of the maximum value you can have, will be the full-scale pressure on Barchart1.

Stack channels of digital data

With this option selected, the Y-axis does not have a scale as such. All enabled channels are given a value of either zero or one and are then plotted against their channel name.



This option is only useful for displaying digital data. In the above example, there are two digital input channels with both channels configured to “draw stepped”.

Y-Axis General Properties

Grid Enabling the grid check box will draw a horizontal grid on the trend.

Y-axis Minor ticks Enabling the minor ticks check box will display minor ticks. If grid is enabled, grid lines for the minor ticks are also displayed.

Y-axis Title Enter a label for the Y-axis in this text box.

Percentage of total window height for this pane If there is only one trend pane on the trend this box is set to 100% and unavailable.

Percentage of total window height for this pane If there is more than one trend pane, you can set the proportion of the trend window that the particular pane will occupy.

Y-Axis Auto-range Properties

- Leave the Y-axis unchanged
- Force the Y-axis scale within the new recommended bounds
- Expand the Y-axis scale to include the new recommended bounds

If the view uses an interactive measurement to set the Y-Axis limits, then those limits can change during the lifetime of the view. Changing the electronic gain, or type of detector for example.

You can select one of three options to control how the view will react to a change in the measurement:

Leave the Y-Axis unchanged

Leaves the Y-Axis settings unchanged when the measurement changes. The settings will be based on the measurement settings when the view is loaded.

Force the Y-Axis scale within the new recommended bounds

Changes the X-Axis settings to match the new measurements settings.

Expand the Y-Axis scale to include the new recommended bounds

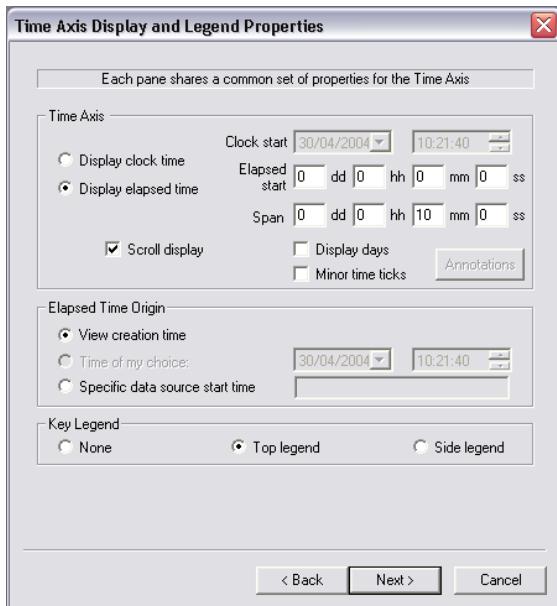
Changes either the maximum or minimum Y-axis setting, to incorporate the new settings.

For example, if you increase the electronic gain, the minimum displayed pressure would be changed to match the smaller pressure that could now be measured. The maximum pressure displayed would remain the same.

If the electronic gain was reset to its previous value the Y-Axis would not change.

Configuring the trend time axis

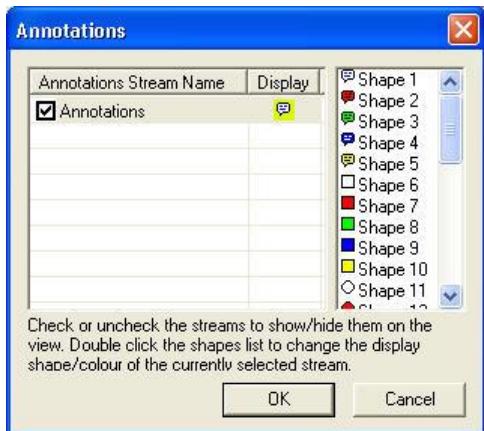
Click <Next> on the Trend properties dialog to bring up the “Time axis and legend properties” dialog.



Time axis properties

- Display clock time** This option will display the time axis using real time as calculated by the PC clock.
- Display elapsed time** This option displays the time axis as an elapsed time. The origin of the elapsed time will depend on how the time origin is defined (See the next section on configuring the elapsed time origin).
- Elapsed start dd hh mm ss Offset from the elapsed time origin that the time axis will start to display.
- Span dd hh mm ss Amount of time that will be displayed on screen, in this case the last 10 minutes of data will be displayed.
- Scroll display** Scrolls the Trend to keep the latest data displayed.
If unchecked, the trend will only display data for the first X minutes. Where X is the number of minutes set in the span.
- Display days** Displays the number of days, as well as the time the Trend has run.
- Minor time ticks** Displays minor ticks on the time axis.

To edit the Annotations icon click on <Annotations>



Any annotation streams defined in the recipe will be listed, check the display box to show the annotation on the view. To change the icon, select one of the icons from the list.

Click <OK> to return to the properties page

Elapsed time origin properties

View creation time Displays the creation time of the view.

Time of my choice: This option is only available when editing a live trend.

Sets the elapsed start time, to the same time that the measurement was created. Type the name of the measurement in the text box.

Specific data source start time

Key Legend properties

None – No legend is displayed

Top Legend – Display the legend at the top

Side Legend – Display the legend at the side

Editing a live Trend

Trend views can be changed by using the following toolbar buttons, these only affect the currently active view.

Alternatively, right-clicking the Trend will show the "View Properties" dialog.

-  Click the Y-axis "minor ticks" button to turn minor ticks on or off for the Y-axis.
-  Click the Y-axis "grid" button to turn the grid on and off for the Y-axis.
-  Click the Y-axis "log/lin" button to change between log and linear mode for the Y-axis.
-  Click the "display days" button to switch on and off the "display days" function.
-  Click the "true/elapsed time" button to switch between displaying the "real time" and the "elapsed time".
-  Click the "X-axis minor ticks" button to turn minor ticks on and off for the X-axis.
-  Click the "X-axis scroll bars" button to turn scroll bars on and off for the X-axis.
-  Click the "legend key" button to make the legend key visible or invisible.
-  Click the "table view" button to move the legend key either to the left of the trend or above the trend.

Adding annotation to a Trend

To add annotation, click the <Annotation> button, this will bring up the



"Annotations" dialog box.

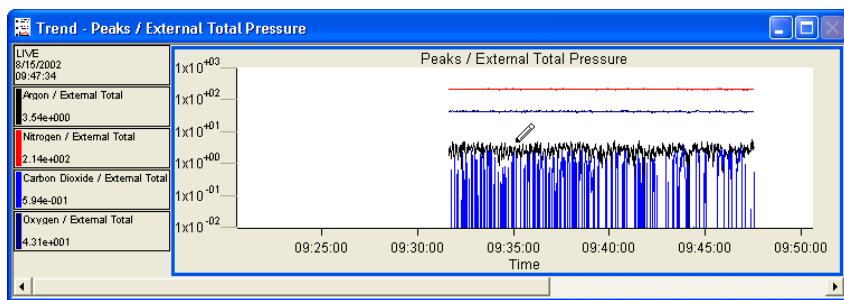


Here you can enter text into the "Note" text box, when your annotation is complete, press the <OK> button. By default, the time of annotation will be the current time, although you can select a new time, by using the "time" and "date" list boxes.

To add an annotation to a trend, click the <Trend Annotation> button,



this will change the cursor to a pen.



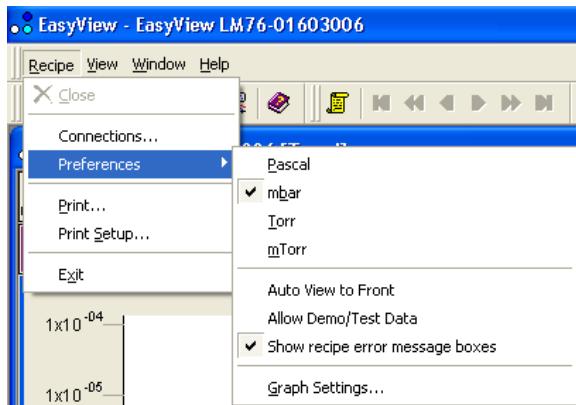
You can move the cursor along the trend line, until the event that you want to annotate, has been selected. Clicking on the trend at this point will bring up the annotation dialog, but now the time will be set to the time at that position on the trend. Currently, the only way to view these annotations is to recall a saved file with annotations, and then save this file as a text file.

The annotations cannot be viewed in any of the EasyView programs.

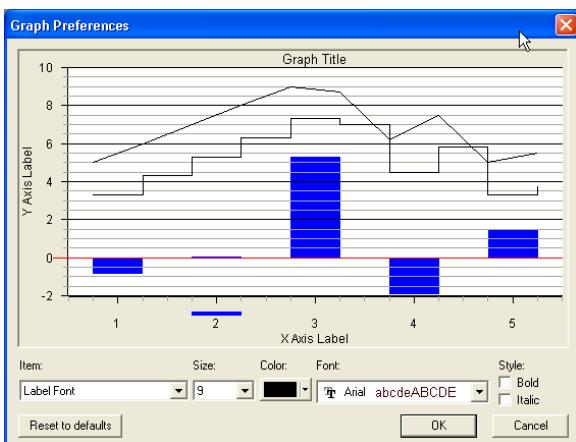
Once added, annotations cannot be removed as they become part of the measurement data.

View Global Properties

You can set the global properties of the views from the "Graph Settings" under "Preferences".



The "Graph Preferences" dialog will appear.

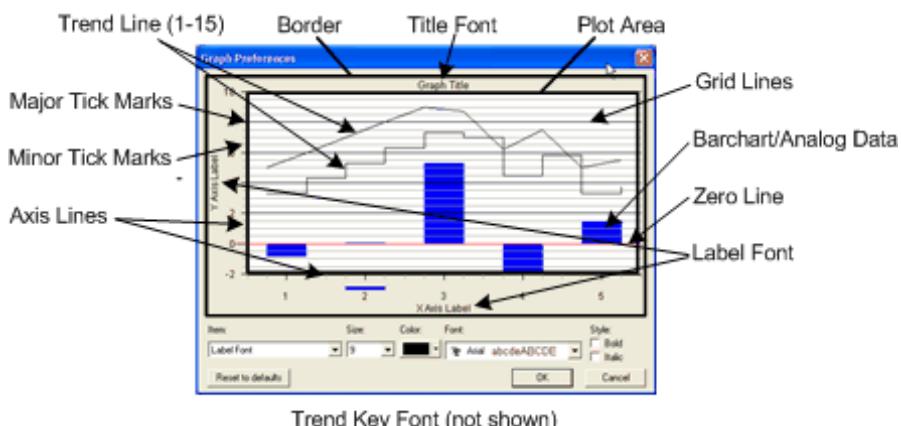


Here you can manipulate the various options used in the graphs, size, colour, font and the style of each item.

The dialog changes to reflect any changes that are made.

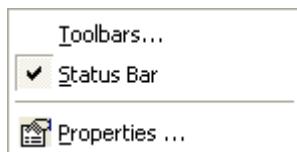
Clicking on the <Reset to Defaults> button will return all the settings, to their factory defaults.

The following diagram shows all the options that can be set. If the properties cannot be changed for a selected item, they will remain "greyed-out".



8. Other Menus

View Pull-Down Menu



This menu can be used to set up the appearance of EasyView.

Toolbars

Selecting "Toolbars" from the menu, will bring up the Toolbars edit dialog.



Status Bar

The Status Bar appears at the bottom of the screen.



To make the Status Bar visible/invisible, click on the "Status Bar" item in the pull-down menu. If a check is visible, then the Status Bar will be visible.

Properties

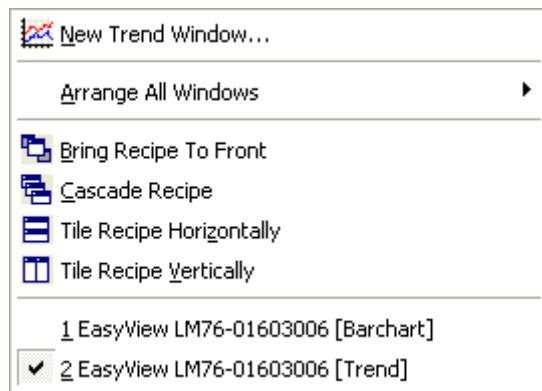
The Properties item will only be active if a mode is running with a view loaded.

Click on the properties button to bring up the view properties of the active view.
If the view is a trend, you will get the trend properties dialog

If the view is a swept measurement view then you will get the swept measurement view properties dialog.

Window pull-down menu

The "Window" pull-down menu is where you can add a new trend view or arrange the view windows you already have.



New Trend Window

Clicking on new trend window will bring up the trend properties window for a new view.

Arrange All Windows

This item will bring up an additional list.



From here, you can arrange the windows in the usual way. In this menu however, all the currently open views from all the currently running measurements will be arranged.

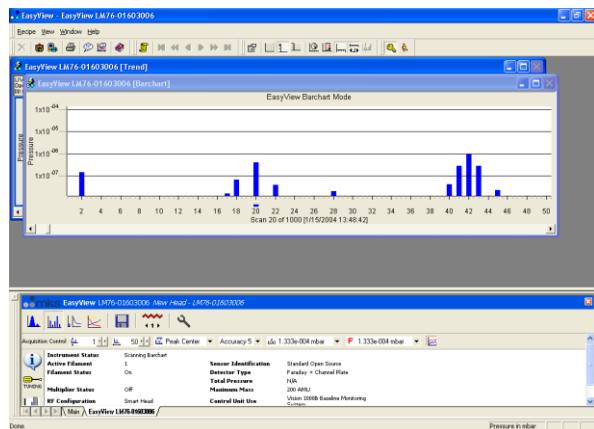
The other arrangement methods in this pull down menu, apply only to the active recipe.

Bring Recipe to Front

Selecting Bring Recipe to front will bring the views for the current active measurement to the front

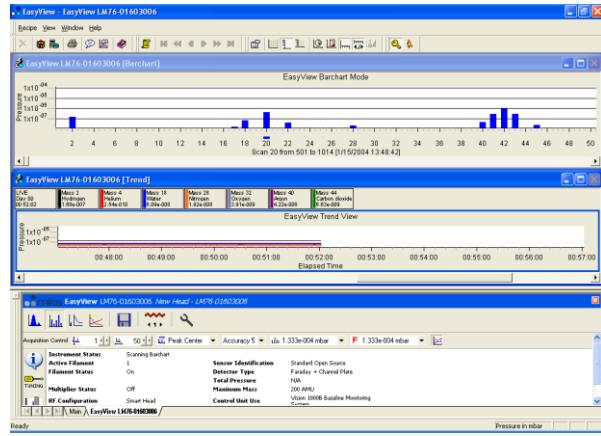
Cascade Recipe

Selecting cascade recipe will bring the views for the currently active measurement to the front and arrange them in a cascade fashion.



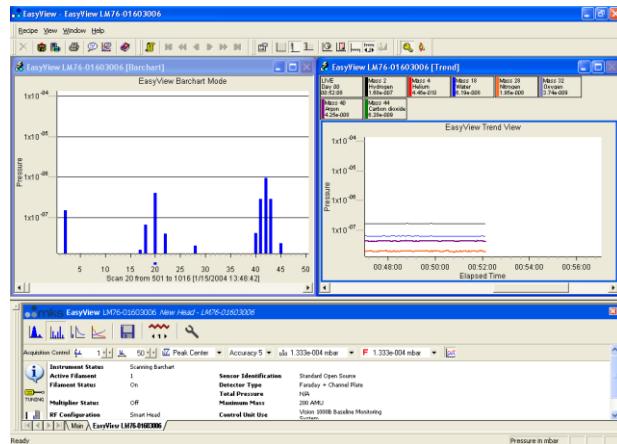
Tile Recipe Horizontally

Selecting tile recipe horizontally will bring the views for the current active measurements to the front and tile them horizontally.



Tile Recipe Vertically

Selecting tile recipe vertically brings the views for the currently active measurements to the front and tiles them vertically.



Selecting Individual View

The bottom section of the pull down list contains a list of the currently open views.

The currently active view is highlighted by tick next to it.

To make a different view active, click on that view

9. EasyView Diagnostics



To run the diagnostics mode click on the diagnostics button
The diagnostics mode is only available when no scan mode has been selected.

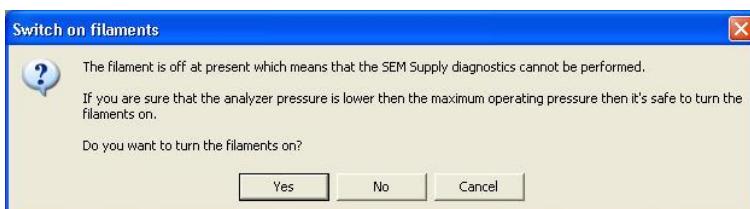
Running diagnostics produces the following report:

Instrument Diagnostic Information					
15/10/2003 11:41:40					
Serial Number: LM76-00399001					
Technology for Productivity User Defined Name: New Head - LM76-00399001					
Process Eye Version: 4.00000420					
Instrument Info					
Sensor Identification	Standard Open Source				
Detector Type	Faraday + Channel Plate				
External Hardware	None				
RF Configuration	Smart Head				
Maximum Mass	200 AMU				
Control Unit Use	Standard RGA				
Embedded Software Version	V3.70				
Active Filament	1				
Diagnostics Results					
Diagnostic	Min	Max	Reading	Passed	
-450V Supply	-533.80	-355.90	-409.99	✓	
-15V Supply	-16.50	-13.50	-15.01	✓	
-130V Supply	-143.40	-116.20	-131.80	✓	
+5V Supply	4.75	5.35	4.96	✓	
+15V Supply	13.50	17.50	14.90	✓	
Source Settings					
	Emission (mA)	Electron Energy (eV)	Ion Energy (eV)	Extract (V)	Faraday A/mbar
Standard Electron Energy	1.00	70.00	5.50	-112.00	1.50e-004
Low Electron Energy	1.00	40.00	5.50	-112.00	1.50e-004
User defined 1	1.00	70.00	5.50	-112.00	1.50e-004
User defined 2	1.00	70.00	5.50	-112.00	1.50e-004
User defined 3	1.00	70.00	5.50	-112.00	1.50e-004
EasyView	1.00	70.00	5.50	-112.00	1.50e-004
Mass Alignment/Resolution Settings					
	Low Mass Alignment	Low Mass Resolution	High Mass Alignment	High Mass Resolution	
Standard Electron Energy	32767	32767	32767	32767	
Low Electron Energy	32767	32767	32767	32767	
User defined 1	32767	32767	32767	32767	
User defined 2	32767	32767	32767	32767	
User defined 3	32767	32767	32767	32767	
EasyView	32767	32767	32767	32767	

The report contains information about the control unit configuration, ion-source settings and mass alignment/resolution settings as well as power supply levels.

This information can help in fault diagnosis if your RGA is not performing as expected.

In order to test the multiplier power supplies, the filament needs to be switched on. If you run diagnostics without switching the filament on the following dialog appears.



Click <Cancel> to exit without running diagnostics

Click <No> to run diagnostics with the filament off, in which case the multiplier voltage will not be tested.

Click <Yes> to switch the filament on and then run diagnostics.

10. EasyView Tuning

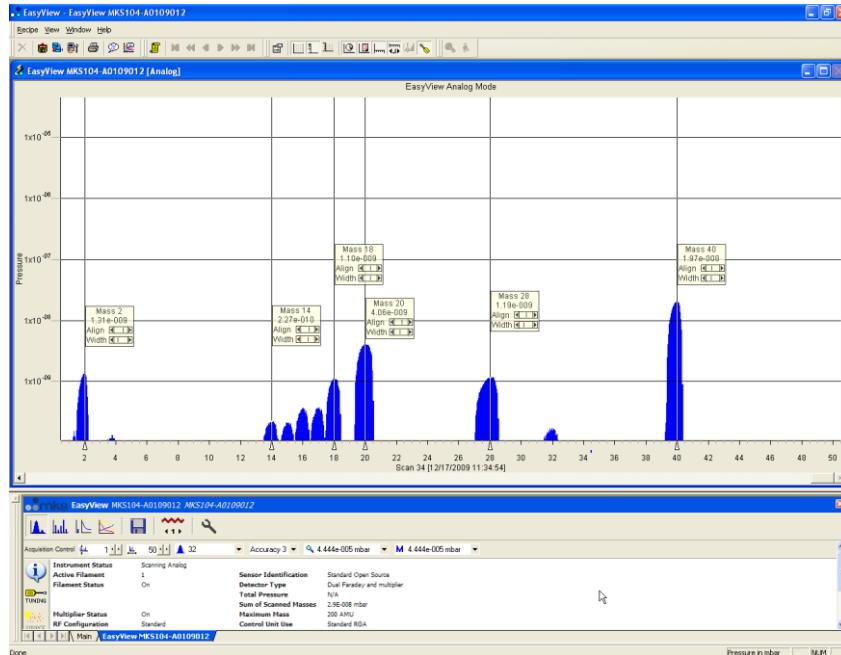
Easy Tuning Mode

Changes to the alignment and width values made while in this mode apply only to the current ion source configuration file.

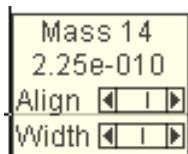
Be sure to open the Advanced Tuning page and use the **Copy To All** function if needed.

As the quality of the scanned spectrum is one of the parameters that needs to be monitored for tuning and mass alignment, the mass tuning functions are only available during an Analog scan.

To enter mass tuning mode, use the screwdriver icon from the toolbar



While in the mass tuning mode mass alignment flags are placed on screen. The vertical position of these flags can be adjusted if needed.

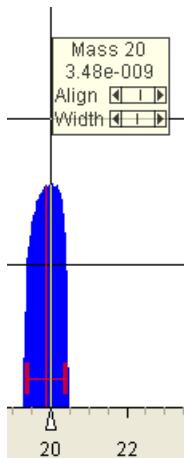


Each mass flag offers adjustment controls for the mass alignment and peak width. Clicking the arrows offers small adjustment, while clicking within the slider offers a larger adjustment.

The mass number and the partial pressure are also displayed.

Remember you can choose to display any mass span you like, simply change the start and end mass parameters in the Acquisition Control toolbar.

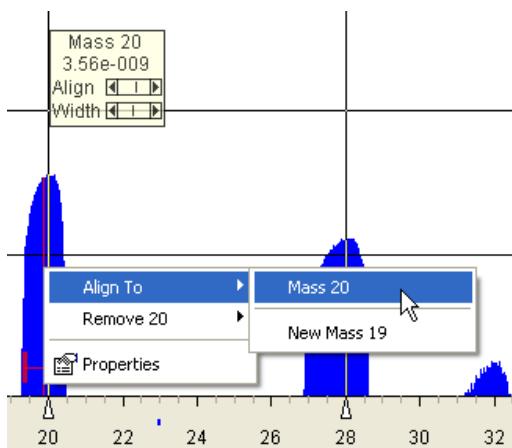




Left-clicking on a particular mass causes a red cursor to appear. Use this cursor to align and resolve the chosen mass.

Adjusting peak alignment

To align a specific mass, move the red cursor to the centre of the mass and right-click to access the mass tuning menu (you can also drag the cursor with the right mouse button which opens this menu as you release the right mouse button).



In this example, the red cursor has been positioned at the centre of mass 20.

To position the peak accurately to the mass 20 point on the axis, right-click and from the **Align To** menu choose mass 20.

The peak is shifted, right or left, so its centre is positioned directly at the mass 20 point on the axis.

Adjusting peak width

A correctly resolved peak is 1amu wide at 5% of its total height, this formula provides decent separation between adjacent peaks without adversely affecting the partial pressure.

To aid with correctly setting the resolution (peak width), the cursor also has a resolution guide which looks like the letter "H". This guide positions itself at 5% of the total peak height and is 1amu wide.

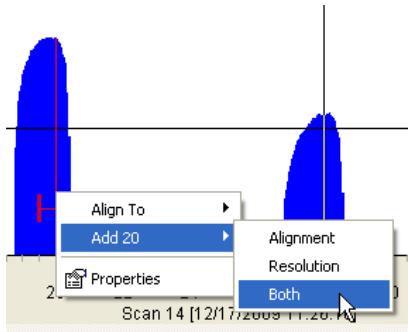
Use the Width slider to adjust the chosen peak so it just fills the boundaries of the resolution guide.

If the "H" is not visible it is because the 5% point is below the minimum of the current measurement. Adjust the measurement by right-clicking and selecting **Properties**.

Adding mass flags

If your control unit was purchased with an analyser, the most common masses will already have mass flags assigned and will already be resolved and aligned, but there will be times when a mass of particular interest does not have a mass flag assigned and may have incorrect alignment and resolution values.

Again this is done via the right-click menu of the red cursor. Drag the cursor to the centre of the new mass and choose **Add 20** in this instance.

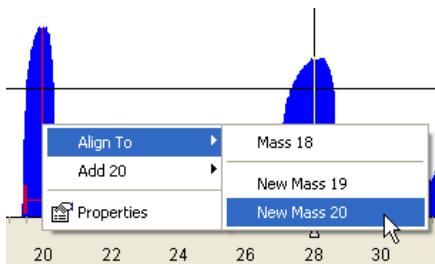


You have the option to add an Alignment point, a Resolution point or both.

The adjustment controls of the mass flag reflect the choices made here.

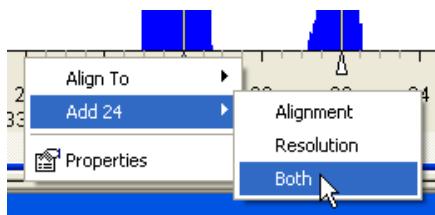
You can always add an Alignment point first and add a Resolution point later if needed.

You can also use the **Align To** command which will align the peak and add a mass flag in one operation.



You can see that you are also presented with a choice to add the peak as mass 18 or 19. This is because Process Eye bases the selection available on the approximate position of the mass at the time.

If you wish to add a point for a particular mass that is more than 2amu off alignment Process Eye may not give an accurate selection of the intended mass. In this case, right-click on the mass axis and use the **Add xx** option.

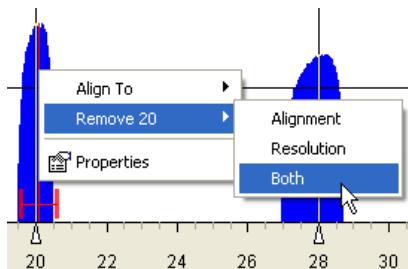


In this example we are adding both an Alignment and Resolution points at mass 24.

You can also manually add masses in the Advanced Tuning menu, see later in this chapter for details.

Deleting mass flags

To delete a flagged mass, right-click and choose **Remove xx**.



In this example we have chosen to remove both the Alignment and Resolution points for mass 20.

Advanced Tuning

The Advanced Tuning page can be used in conjunction with the Easy Tuning mode if needed. Along with the alignment and resolution values for all the added masses (needed if you wish to revert back to your previous settings) it allows direct deletion of masses and the ability to copy the mass alignment and resolution settings to all ion source configurations (those made while using the Easy Tuning mode are applied to the currently selected ion source configuration).



To view the advanced page, click the screwdriver icon from the vertical toolbar in the lower pane.

You can see that this view provides certain details the simplified view does not.

You can add a mass flag for Alignment, Resolution or both in the text fields shown below. Once entered, click the green plus icon to add.

In the example above, you can see that mass 21 is to be added to the mass table, once added the entry appears in the main view along with the current values for Alignment and Width.

Entries for the alignment, width or both can be deleted using the red "X" icon.

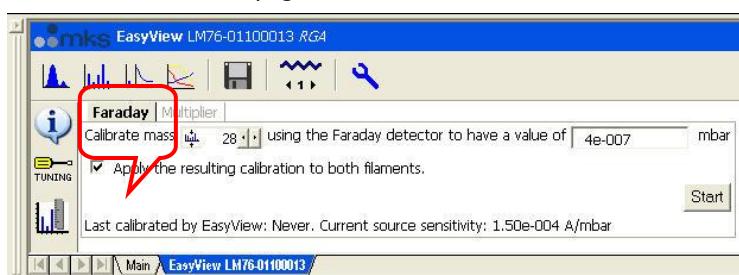
Use the **Copy To All** button to copy either the alignment, width or both sets of values to all ion source configurations if required.

11. EasyView Calibration

Mass spectrometers measure an ion-current and not an actual pressure. In order to convert this ion-current to a pressure, we need to calculate a calibration factor.

In calibration mode, the user supplies the actual partial pressure of a given gas and EasyView calculates the calibration factor required to convert the measured ion-current to this pressure.

To view the calibration page click on the calibration button



Click on the <Faraday> tab to enter the Faraday calibration setup page.

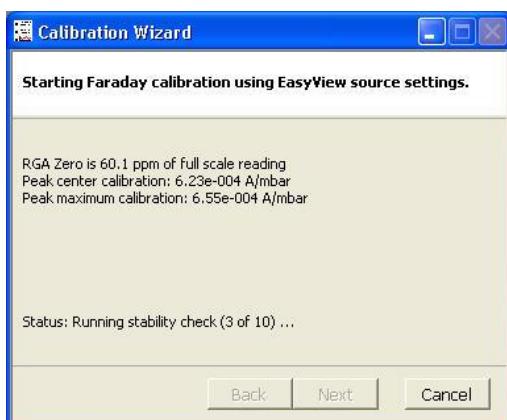
Choose a mass that you know the actual partial pressure of to calibrate on, and enter the partial pressure of that mass.

To start the calibration click on <Start>

The date of the last calibration using these settings is displayed at the bottom of the window.

Calibration can only be performed if the instrument is not in one of the scanning modes.

The calibration routine will then measure the zero, the peak maximum value and the peak centre value of the mass chosen and then perform a stability check of 10 scans.



Click <Next> to view the results of the calibration



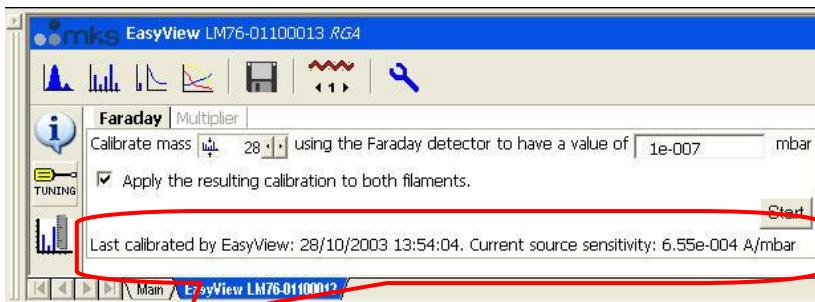
To exit without writing the new calibration information, click <Cancel>.

To apply the factory default calibration click <Default>.

Otherwise choose <Apply> to write the calibration information.



The calibration is now complete click on <Finish> to exit.



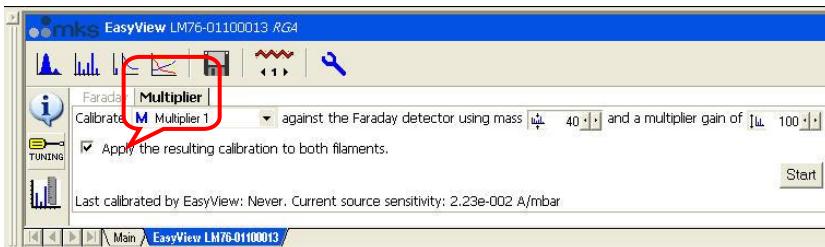
The date and sensitivity value of the calibration just performed is displayed at the bottom of the EasyView window.

```
<MESSAGE Time="2003-10-28 13:52:58" Value="Calibrating RGA (Source: EasyView, Faraday detector" />
<MESSAGE Time="2003-10-28 13:52:58" Value="Parameters: mass=28;pkht=1.00e-007" />
<MESSAGE Time="2003-10-28 13:52:58" Value="Existing sensitivity: 2.18e-004 A/mbar" />
<MESSAGE Time="2003-10-28 13:53:05" Value="Filaments have been on for 2.8 minutes" />
<MESSAGE Time="2003-10-28 13:53:08" Value="Gain: 100, fsp: 9.16e-005 mbar, RGA Zero is 60.1 ppm of full scale reading" />
<MESSAGE Time="2003-10-28 13:53:10" Value="Reading: 2.91e-007 mbar" />
<MESSAGE Time="2003-10-28 13:53:10" Value="Peak center calibration: 6.23e-004 A/mbar" />
<MESSAGE Time="2003-10-28 13:53:29" Value="Peak maximum calibration: 6.55e-004 A/mbar" />
<MESSAGE Time="2003-10-28 13:53:48" Value="Calibration succeeded. The stability test result was excellent." />
<MESSAGE Time="2003-10-28 13:53:57" Value="Calibration applied: EasyView: New factor = 6.55e-004 A/mbar" />
```

The details of the calibration shown above, are also be logged to the log file, located in `\..\EasyView\Logs\Process.xml`.

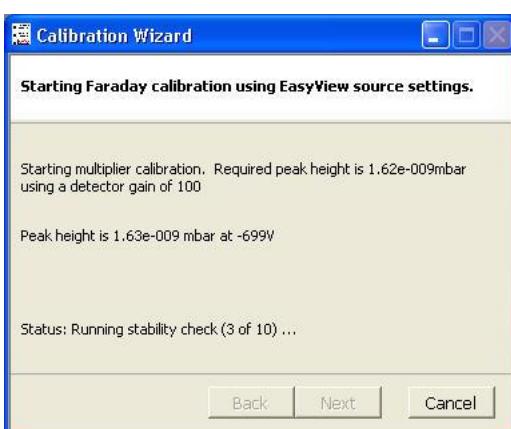
Multiplier Calibration

To calibrate the multiplier click the `<Multiplier>` tab on the calibration page.

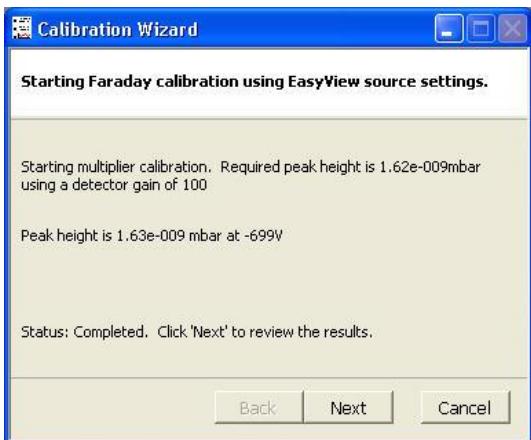


Select the multiplier setting to be calibrated from the drop down list, the mass to calibrate on and the multiplier gain required. The multiplier will be calibrated at the mass chosen, so that the pressure reported in faraday and multiplier at this mass will be the same.

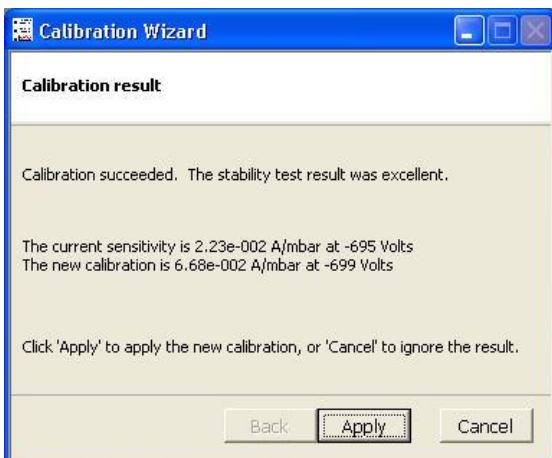
Click `<Start>` to begin the calibration.



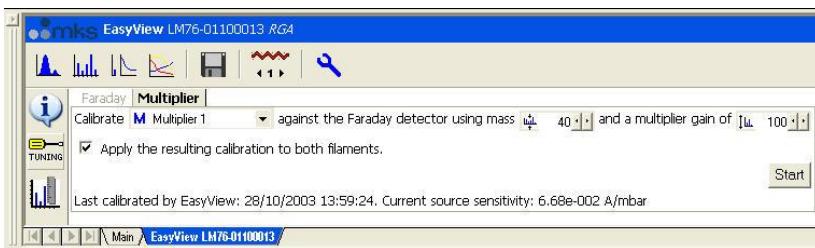
The calibration will do a zero, measure the peak height in faraday, adjust the multiplier voltage so the peak height in multiplier with the gain specified matches and then check the stability.



When the calibration finishes, click <Next>.



Details of the previous and current calibration will be displayed, click <Apply> to apply the current calibration.



```

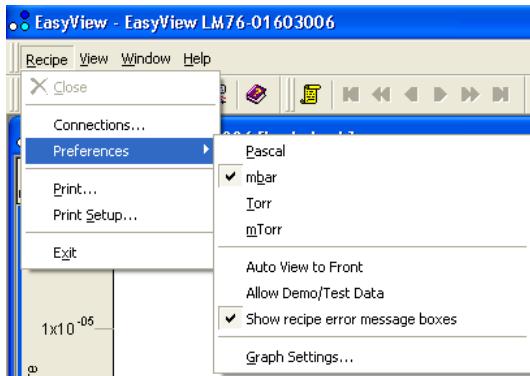
<MESSAGE Time="2003-10-28 13:52:58" Value="Calibrating RGA (Source: EasyView, Faraday detector" />
<MESSAGE Time="2003-10-28 13:52:58" Value="Parameters: mass=28;pkht=1.0e-007" />
<MESSAGE Time="2003-10-28 13:52:58" Value="Existing sensitivity: 2.18e-004 A/mbar" />
<MESSAGE Time="2003-10-28 13:53:05" Value="Filaments have been on for 2.8 minutes" />
<MESSAGE Time="2003-10-28 13:53:08" Value="Gain: 100, fsp: 9.16e-005 mbar, RGA Zero is 60.1 ppm of full scale reading" />
<MESSAGE Time="2003-10-28 13:53:10" Value="Reading: 2.91e-007 mbar" />
<MESSAGE Time="2003-10-28 13:53:10" Value="Peak center calibration: 6.23e-004 A/mbar" />
<MESSAGE Time="2003-10-28 13:53:29" Value="Peak maximum calibration: 6.55e-004 A/mbar" />
<MESSAGE Time="2003-10-28 13:53:48" Value="Calibration succeeded. The stability test result was excellent." />
<MESSAGE Time="2003-10-28 13:53:57" Value="Calibration applied: EasyView: New factor = 6.55e-004 A/mbar" />
<MESSAGE Time="2003-10-28 13:53:51" Value="Calibrating RGA (Source: EasyView, Multiplier 1 detector" />
<MESSAGE Time="2003-10-28 13:53:51" Value="Parameters: mass=40;pkht=0.0e+000;dgain=100;mmpkht=0" />
<MESSAGE Time="2003-10-28 13:53:51" Value="Existing settings: sensitivity: 2.23e-002 A/mbar, voltage: -695.0 volts" />
<MESSAGE Time="2003-10-28 13:56:04" Value="Filaments have been on for 5.8 minutes" />
<MESSAGE Time="2003-10-28 13:57:01" Value="Peak height of mass 40.03amu using Faraday detector: 1.62e-009mbar" />
<MESSAGE Time="2003-10-28 13:57:01" Value="Starting multiplier calibration. Required peak height is 1.62e-009mbar using a detector
gain of 100" />
<MESSAGE Time="2003-10-28 13:58:16" Value="The current sensitivity is 2.23e-002 A/mbar at -695 Volts The new calibration is 6.68e-
002 A/mbar at -699 Volts" />
<MESSAGE Time="2003-10-28 13:58:32" Value="Calibration applied: EasyView: New factor = 6.68e-002 A/mbar" />
```

The date and sensitivity of the current calibration will be displayed at the bottom of the EasyView window

The details of the calibration shown above, are also be logged to the log file, located in \..\EasyView\Logs\Process.xml.

12. Preferences

The Preferences menu can be accessed from the <recipe> pull-down menu.



Units of Pressure

EasyView supports the following pressure units, Pascal, mBar, Torr and mTorr.

The internal units used by EasyView are Pascal and all internal pressure values are stored in these units. This enables EasyView and Recall to use different units to display pressures, depending on the preference set in the particular program. Pascal is simply converted to the required unit, before displaying the information.



A "tick" in the selection indicates the currently used pressure unit.
All pressure axis will be labelled with the selected unit.

Auto View to front

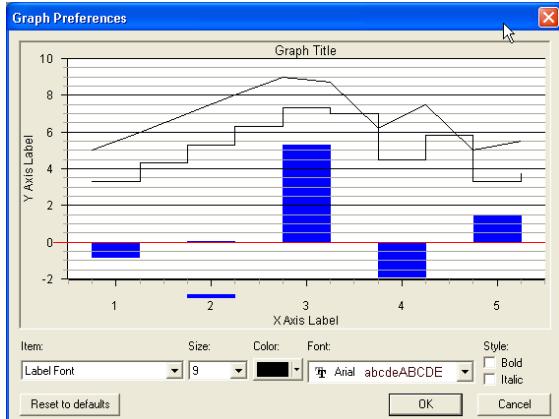
When EasyView is running a measurement, the view for that measurement is displayed in the Views Window. When more than one recipe is running however, not all views are displayed.

With the <auto view to front> the view for the currently selected instrument is visible.



To select a recipe click on its tab in the EasyView control window

Graph Settings



From the <graph settings> option, the global properties for the views can be adjusted.

Common Gases List

The list of common gases which is used throughout the program when editing Trend channels for example, can be tailored to suit your application using Notepad.

This file is located in:

C:/Program Files/Spectra/RGA Applications/Workstation

13. Printing

Both <print setup> and <print> can be accessed from the recipe pull-down menu. Unless a measurement is running, the <print> option will be greyed out.

In addition there is a print button on the tool bar.



Printing a View

You may print any active view, if the view is not currently active, click on the view you wish to print, so it becomes the active view.

Then either click on the <print> button or select <print> from the recipe pull-down menu.

If you click on the print button, the print will start immediately with the default settings. If you select <print> from the recipe pull-down menu, the standard Windows print dialog appears giving you the option to change the default printer settings.

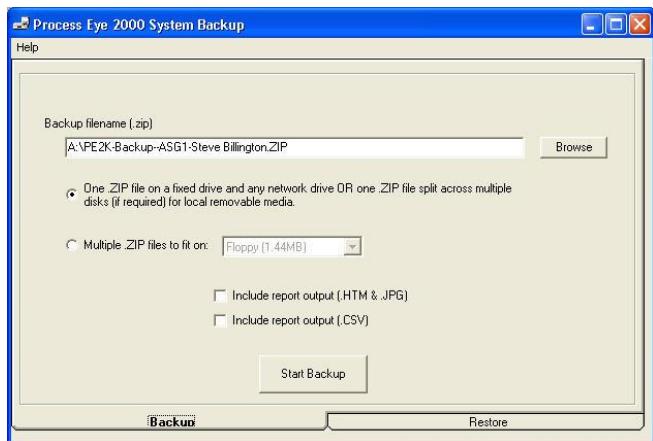
You may only print swept measurement views and trends, other views within EasyView cannot be printed.
If you do require a hard-copy of these other views, use <print screen> from the keyboard.

14. EasyView Tools

Under the "Tools" menu, there are three programs available as shown. The following section explains each program in turn.

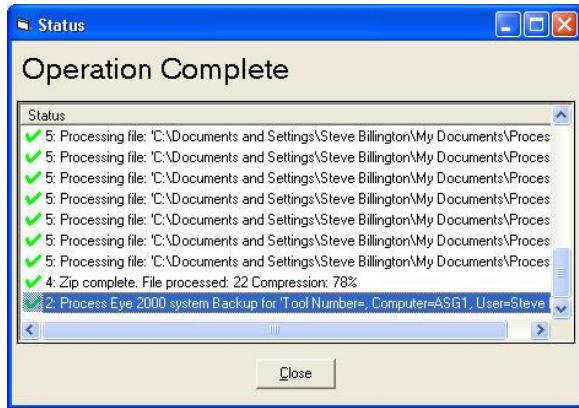
14.1 Backup and Recover

The Backup and Recover tool is used to backup the current EasyView installation. The tool will backup the views and registry settings for the current user.



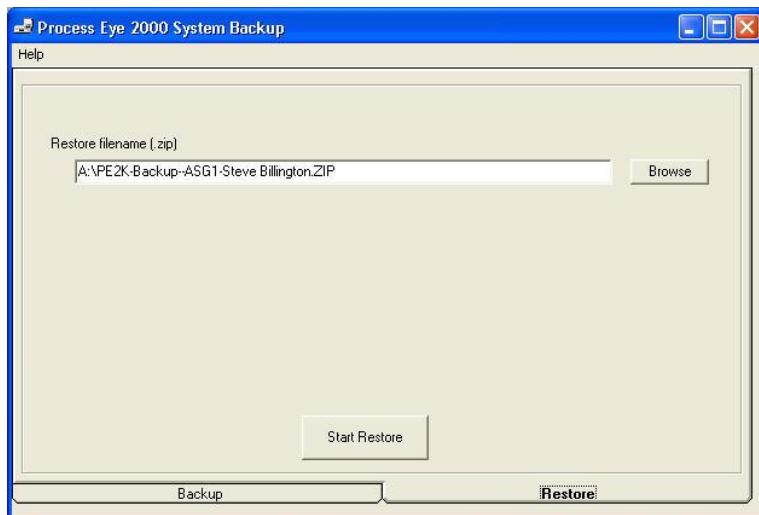
When ready, click <Start Backup> to begin.

Choose the location and name for the backup file. To make a spanned backup across a number of disks click the "Multiple Zip files to fit" option and then select the type of media. There is also a custom size option where you may specify the file size of each spanned file.

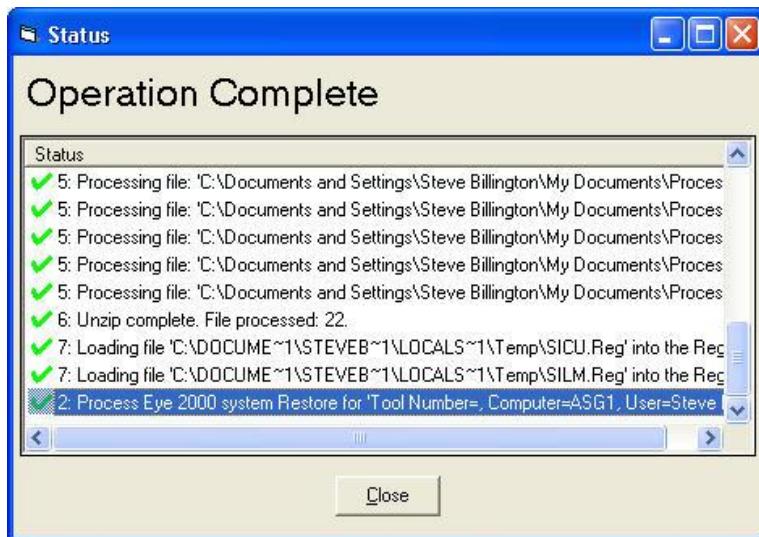


When the operation has completed, click the <Close> button to exit.

To restore from a back-up file, click on the <Restore> tab.



Use the <Browse> button to select the backup and on <Start Restore> to begin.



When the restore is complete click the <Close> button.

14.2 Computer Lock

EasyView has the ability to lock the computer to prevent unauthorised use.

Note: If you misplace the account information, MKS cannot recover it.

The first time the utility is run a dialog appears detailing the functions of the lock program, click <Yes> to continue.



The above dialog displays the initial username of "admin" and a blank password, as the dialog suggests, you should give this "admin" account a new password as soon as possible.

Click <Yes> to continue.



The computer is now locked, to unlock enter "admin" in the UserName text box and then click on <Logon>.



Click on <Configure> to begin adding users, or change the admin password.



In configure you can create, edit and delete users. You can also change the inactivity time before the computer is locked.

Click on <Edit>



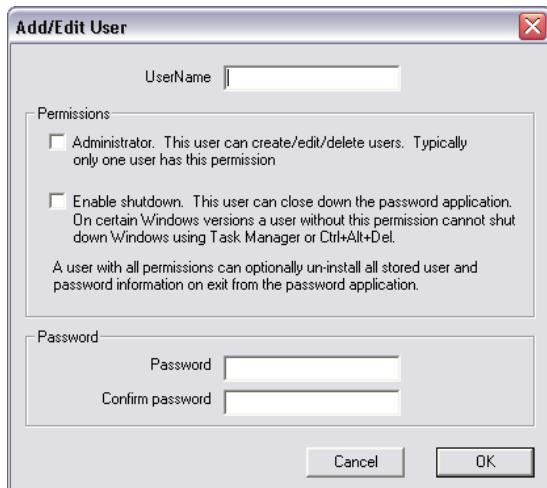
The default "Admin" account should have the options shown selected, if not, select them.

You must always have at least one Admin account with the options shown selected.

Add a password for the admin account.

Click <OK> to save the settings and exit.

To create a new user account, click the <New> button.



Add a "Username", select the permissions and enter a password for the account.
Click <OK> to save the account.

Permissions

"Administrator" – can add, edit and delete users.

"Enable Shutdown" – allows the account to close the password application.

Checking both options gives the account the option to not only end the computer lock, but also to either save, or delete the current list of users on exit.

Exiting Computer Lock

Log on using your admin account.



Click on the close button at the top right-hand corner of the dialog.



Click <Yes> to exit the lock, if no user action is taken, the program will revert back to a locked state.



At this dialog, clicking <No> will delete any users, except for the default admin account, you have created.

Clicking <Yes> saves any new accounts you have created.



15. Java Web Applet

All "IP" based instruments along with the Microvision2, eVision2 and HPQ3 can be operated via your web browser.

The applet is highly intuitive and includes all the data display routines required for troubleshooting, including leak detection mode.

All that is required is a Java enabled Web browser and the IP address of the unit you wish to view.

Simply enter the IP address of the sensor you wish to view into the "Address" field of your browser and you are taken to the sensor's home page. A Java applet can be downloaded from this page to enable access.

For help on using your instrument via a web browser, please see the context sensitive on-line help.