



SUPPLEMENTARY INFORMATION

EN

Translation of the Original

QMG 250 PRISMAPRO®

Quick Start Guide

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1 Quick Start

This Quick-Start Guide is a shortened and simplified implementation guide for the product and contains excerpts from the full operating instructions.

Observe the operating instructions for the product

- ▶ To obtain complete information about the product and during all activities you must always observe the operating instructions, particularly the safety instructions and warnings.



PV MassSpec software tutorial

On the [Pfeiffer Vacuum YouTube channel](#) you can find a detailed [PV MassSpec software tutorial](#) with information on how to install and set up the PrismaPro.

(Link: <https://youtu.be/DkezYz9KC6Q>)

1.1 Scope of delivery

The scope of delivery includes the following parts:

- QMG 250 PrismaPro
 - Analyzer QMA 250 with transport protection and intermediate piece (EM variant only)
 - Electronic unit QME 250
 - SP 250 Power supply unit
 - Copper gasket DN 40 CF
- Installation hardware and small parts
 - Analyzer assembly set (fastening nut, o-ring, 6× hexagon head set screw with nuts (M6) and washers)
 - Socket key for the filament replacement
 - assembly tool for QMA 250 Analyzer
- Connector assemblies and cables
 - Ethernet cable (UTP patch cable, red, length 3 m, crossed connection)
 - D-sub plug (15-pin, male, with housing and strain relief)
 - HD D-sub plug ¹⁾ (62-pin, male, with housing and strain relief)
 - Cable plug ²⁾ (Amphenol, 6-pin, male, for measuring tube connection)
- Documentation
 - Operating instructions (multilingual)
 - Quick-Start Guide (multilingual)
- Miscellaneous
 - Test report (accessible on device)
 - Web UI (accessible on device)
 - PV MassSpec software (downloadable via PV Cloud)

Unpacking the product and checking completeness of the shipment

1. Unpack the product.
2. Remove the transport fasteners, transport protection etc.
3. Store the transport fasteners, transport protection etc. in a safe place.
4. Check that the shipment is complete.
5. Ensure that no parts are damaged.

1.2 Installing the Analyzer



Horizontal analyzer positioning

The analyzer is suitable for installation on the vacuum system in any position. Pfeiffer Vacuum recommends a horizontal mounting position. This has the following advantages:

- Optimum protection for the electronic unit against falling items
- Easier installation
- Easy access to the front panel of the electronic unit

1) Only in conjunction with IO 250 I/O module option

2) Only in conjunction with IO 250 I/O module option

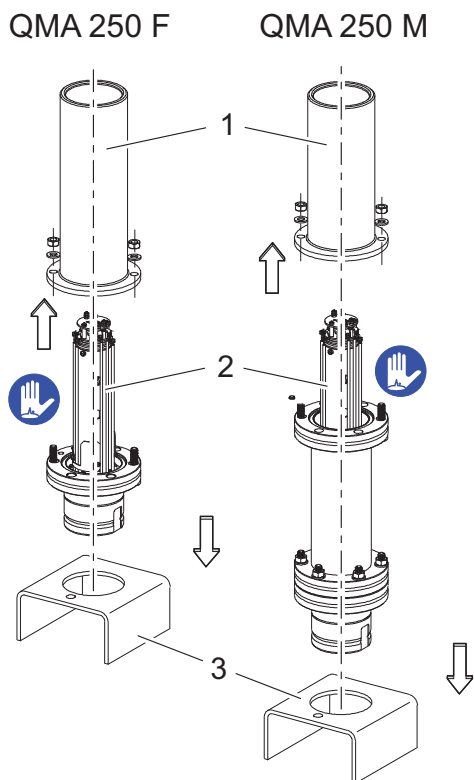


Fig. 1: Installing the QMA 250 Analyzer

- 1 Installation tool
- 2 Transport protection and lock

Installing the Analyzer on a vacuum system

Connection flange: DN 40 CF-F

1. Place the Analyzer in the installation tool supplied.
2. Carefully remove the transport protection.
3. Gently pull the transport lock away from the unit.
4. Retain the transport protection and transport lock for subsequent use.
5. Use a new copper gasket for the flange connection to the vacuum system.
6. Attach the screws with the screw heads on the same side as the electronic unit to avoid interference with the black fastening nut.

1.3 Installing the electronic unit

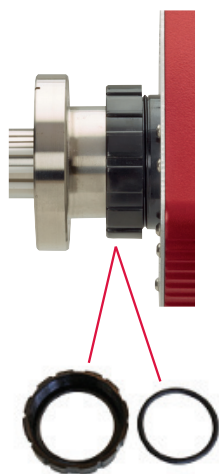


Fig. 2: Analyzer with fastening nut and O-ring on the QME



Fig. 3: QME connection with earthing tongue

Procedure

1. Slide the fastening nut over the end of the analyzer.
2. Place the O-ring on the end of the analyzer.
3. Roll the O ring down the analyzer until it sits in the groove.
4. Carefully insert the electronic unit up to the notched mark on the previously installed analyzer.
5. Ensure correct positioning of the earthing tongue and guide groove.
6. Ensure that the electronic unit is properly mounted.
7. Manually tighten the fastening nut on the electronic unit.

The fastening nut compresses the O-ring and ensures firm seating of the electronic unit on the analyzer housing.

1.4 Establishing the Ethernet connection

Connecting the Ethernet cable

- ▶ Connect the Ethernet cable supplied to the QME 250 electronic unit and the PC.

1.5 Connecting the current supply

Procedure

1. Slide back the lock on the 24 V cable plug of the current supply.
2. Connect the cable to the 24 V socket on the electronic unit QME 250.
3. Release the lock to engage the plug on the electronic unit QME 250.
4. Connect the current supply mains cable to the power supply pack.
5. Plug the mains cable AC plug into a suitable outlet.
6. Ensure that the <POWER> LED on the front panel lights up.
7. Check the power connections if the <POWER> LED does not light up.

1.6 Changing the host computer IP address



Administrator rights

The following steps apply to the Windows 7 operating system. Changing the host computer IP address requires administrator rights. Contact your system administrator if necessary.



Ex factory IP address 192.168.1.100

The unit is assigned the IP address 192.168.1.100 at the factory. You cannot use it here.



Changing the IP address back to the default

Perform these steps from the beginning again and replace the IPv4 properties again with the standard values in order to change the IP address back to standard.

Procedure

1. Click Start in the task bar.
2. Click on Control Panel.
3. In the "Network and Internet" section, click on Network status and tasks.
4. Click on Change adapter settings.

5. Right-click on the existing connection (e.g. LAN).
6. Select Properties.
7. Select Internet Protocol Version 4 (TCP/IPv4).
8. Select Properties.
9. In the Properties menu under Use the following IP address, enter the IP address 192.168.1.xxx and Subnet mask 255.255.0.0.
 - "xxx" must not be 100 in the IP address.
10. Confirm the entries with OK to set the IP address to the manual IP address selected.
11. Close all open Control Panel windows.

1.7 Connecting the PrismaPro Web UI



Unknown IP address

If you have changed the IP address and lost the new IP address, please contact Pfeiffer Vacuum.


PFEIFFER VACUUM																																			
<div style="display: flex; justify-content: space-between;"> STATUS MONITOR LEAKCHECK DIAGNOSTICS PRINT HELP </div>																																			
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <table border="1"> <tr><td>SENSOR ID</td><td>QMSPrismaPro</td></tr> <tr><td>DESCRIPTION</td><td>QMS Messplatz</td></tr> <tr><td>SENSOR SERIAL NUMBER</td><td>70098677</td></tr> <tr><td>ELECTRONICS SERIAL NUMBER</td><td>70000003</td></tr> <tr><td>IP ADDRESS</td><td>172.16.14.42</td></tr> <tr><td>SUBNET MASK</td><td>255.255.224.0</td></tr> <tr><td>GATEWAY</td><td>0.0.0.0</td></tr> <tr><td>DHCP ENABLED</td><td>OFF</td></tr> <tr><td>MAC ADDRESS</td><td>00:A0:41:02:10:41</td></tr> <tr><td>PORT NUMBER</td><td>80</td></tr> <tr><td>MASS RANGE</td><td>100</td></tr> <tr><td>DETECTOR TYPE</td><td>CDEM</td></tr> <tr><td>EMISSION STATUS</td><td>OFF</td></tr> <tr><td>EM STATUS</td><td>OFF</td></tr> <tr><td>FILAMENT NUMBER</td><td>2</td></tr> <tr><td>RELEASE</td><td>1.5.0-TEST6</td></tr> <tr><td>WEB UI RELEASE</td><td>1.4.2-TEST10</td></tr> </table> </div> <div style="width: 35%;"> <p>Prisma Pro</p>  <div style="border: 1px solid black; padding: 5px;"> <p>SETTINGS</p> <p>SENSOR ID: QMSPrismaPro</p> <p>DESCRIPTION: QMS Messplatz</p> <p>IP ADDRESS: 172.16.14.42</p> <p>SUBNET MASK: 255.255.224.0</p> <p>GATEWAY: 0.0.0.0</p> <p>DHCP ENABLED: OFF</p> <p>PORT NUMBER: 80</p> <p style="text-align: center;">SET</p> </div> </div> </div>		SENSOR ID	QMSPrismaPro	DESCRIPTION	QMS Messplatz	SENSOR SERIAL NUMBER	70098677	ELECTRONICS SERIAL NUMBER	70000003	IP ADDRESS	172.16.14.42	SUBNET MASK	255.255.224.0	GATEWAY	0.0.0.0	DHCP ENABLED	OFF	MAC ADDRESS	00:A0:41:02:10:41	PORT NUMBER	80	MASS RANGE	100	DETECTOR TYPE	CDEM	EMISSION STATUS	OFF	EM STATUS	OFF	FILAMENT NUMBER	2	RELEASE	1.5.0-TEST6	WEB UI RELEASE	1.4.2-TEST10
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Fig. 4: PrismaPro Web UI: "STATUS" window

Connecting the PrismaPro Web UI

1. Type IP address **192.168.1.100** into the browser address bar.
2. Press Enter.
 - The browser connects to the PrismaPro. If the PrismaPro is switched on and connected to the same network as the device, the "STATUS" window appears in the PrismaPro Web UI.
3. If the "STATUS" window does **not** appear: Refresh the browser.
4. If the "STATUS" window still does not appear, proceed as follows:
5. Make sure that you have not connected any other devices to the PrismaPro Web UI.
6. Refresh the browser again.
7. Click "HELP" for more information.

2 PV MassSpec



Information about PV MassSpec

You can find detailed information in the "Help" section of the software.

2.1 Installing PV MassSpec



Access credentials

You can find the access credentials in the PrismaPro Web UI under the "HELP" menu.



Fig. 5: Link of PV MassSpec on the desktop

Procedure

1. Open the directory in the Pfeiffer Vacuum Cloud.
2. Download the software.
3. Start the software installation by double-clicking "PVMassSpec_Installer.exe".
4. If necessary, acknowledge the User Account Control prompt with "Yes".
5. Follow the installation in the wizard.
6. Accept the license with "Yes".
7. Enter your name and company name in the Customer Information window.
8. Confirm your entries with "Next".
 - The software performs and completes the installation, and stores the program data on the C drive in the newly created "Pfeiffer Vacuum" folder.

Following successful installation, a link PV MassSpec is created on the desktop.

2.2 Starting PV MassSpec and adding devices

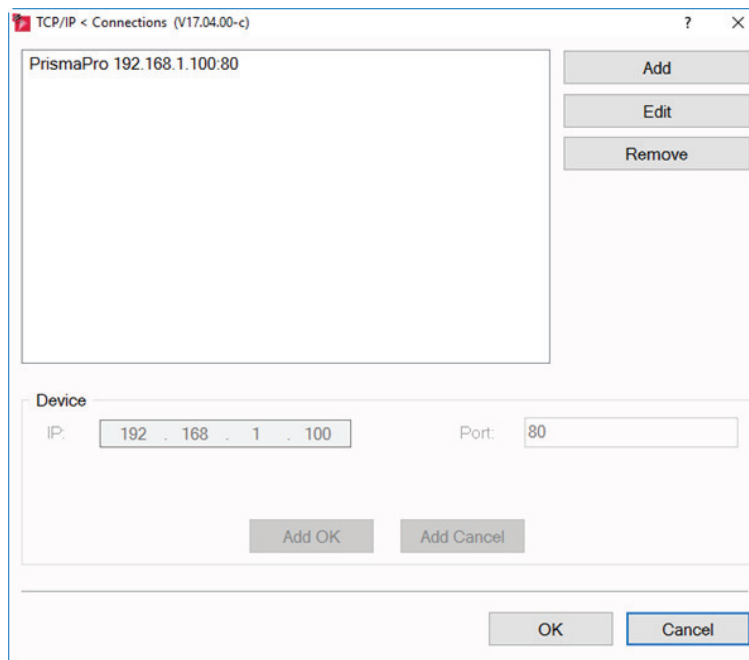


Fig. 6: "TCP/IP Connections" window

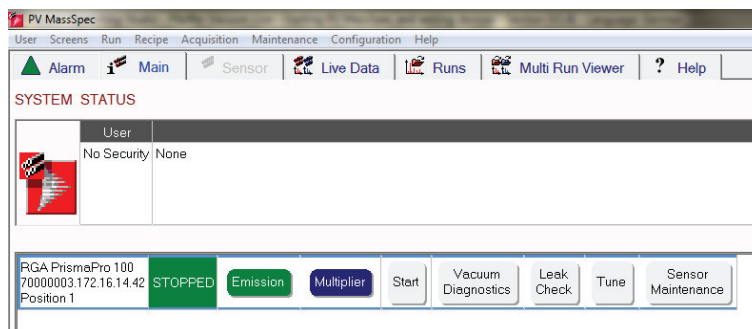


Fig. 7: Main window (Main)

Starting PV MassSpec and adding devices

1. Double-click on the **desktop shortcut**.
 - After the program starts, you will need to **add one or more PrismaPro units**. To do this, you require the **IP address(es)** of your PrismaPro units/unit. If you do not know the IP addresses, you can find them using the "**Mass Spec Search**" program: Windows "Start" > All Programs > Pfeiffer Vacuum > Mass Spec Search
2. Select the "Main" window and click "**Configuration > Connections (Sensors)**" in the menu bar.
3. Select "**HTTP**" and click "**Edit**".
4. In the "TCP/IP Connections" window, click "**Add**".
5. In "Device", enter the **IP address** of the first PrismaPro. Leave the port as "**80**".
6. Click "**Add OK**" and then "**OK**".
 - The PrismaPro has now been added and is displayed in the "Connections" window.
7. Click "**Close**" to finish adding.
 - After a few seconds, the PrismaPro appears in the main window (Main).
8. Repeat this process to add **additional PrismaPro units**.

2.3 Performing a vacuum analysis with PV MassSpec



No data storage

The software does **not** store the analysis data.

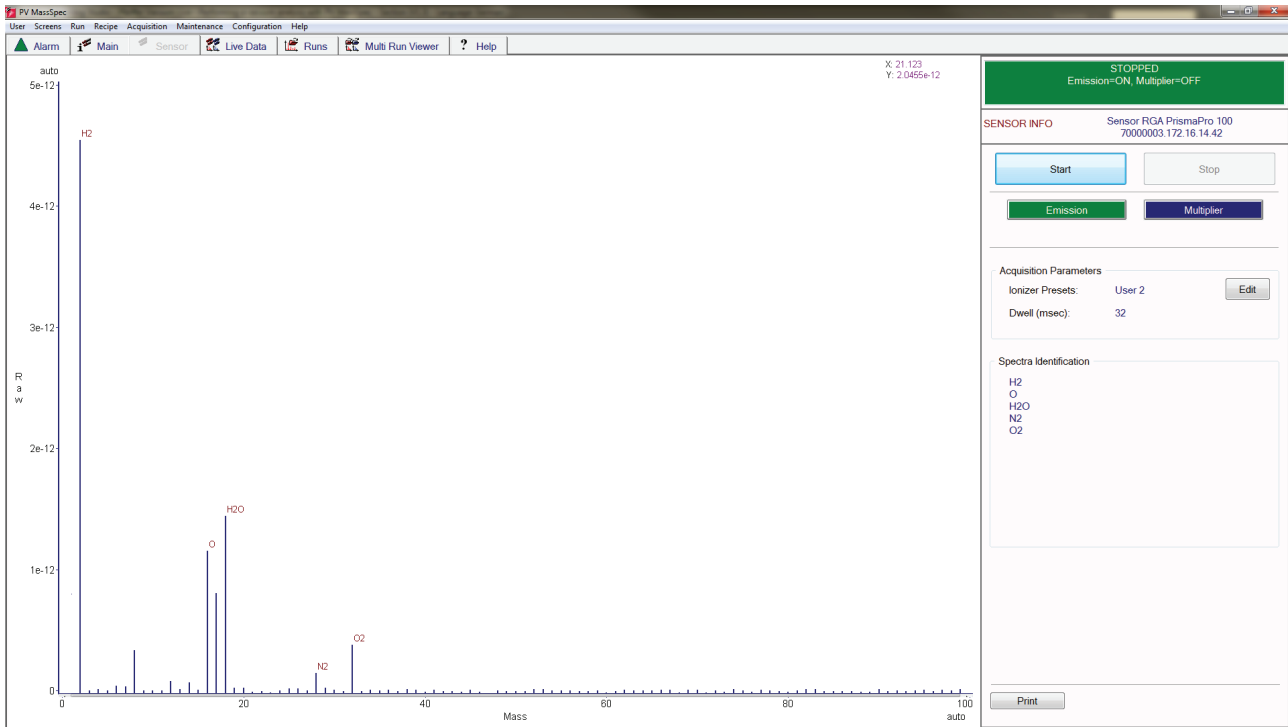


Fig. 8: Example: Air components

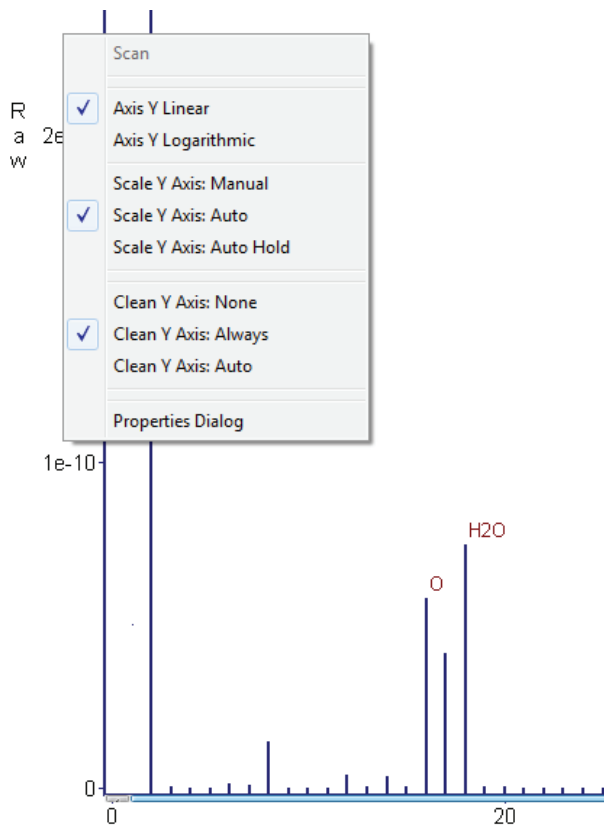


Fig. 9: Axes options

Performing a vacuum analysis with PV MassSpec

1. To obtain the best results, ensure that the vacuum on the analyzer is $\leq 1 \times 10^{-5}$ hPa.
2. In the main window (Main), click "**Vacuum Diagnostics**" in the respective PrismaPro line to carry out a **quick vacuum system check**.

3. In the next window, click **"Start"**.
 - The PrismaPro switches on the filament emission, scans the masses, and displays the signals as ion currents on the Y axis. The PrismaPro uses the Faraday detector and identifies the signals based on the typical gas components in the vacuum analysis.
4. If your PrismaPro is equipped with an **electron multiplier (EM)**, and the vacuum is $\leq 1 \times 10^{-6}$ hPa, clicking **"Multiplier"** allows you to switch on signal amplification by the EM. This allows you to determine even the smallest traces in the gas composition.
5. Use the **context menu** to switch to **logarithmic representation**.
 - Right-clicking to the left of the Y axis to open the **axis options**.
6. To **exit the gas analysis**, click **"Stop"** and then **"Main"** to return to the main window.

2.4 Carrying out leak detection with helium or other test gas

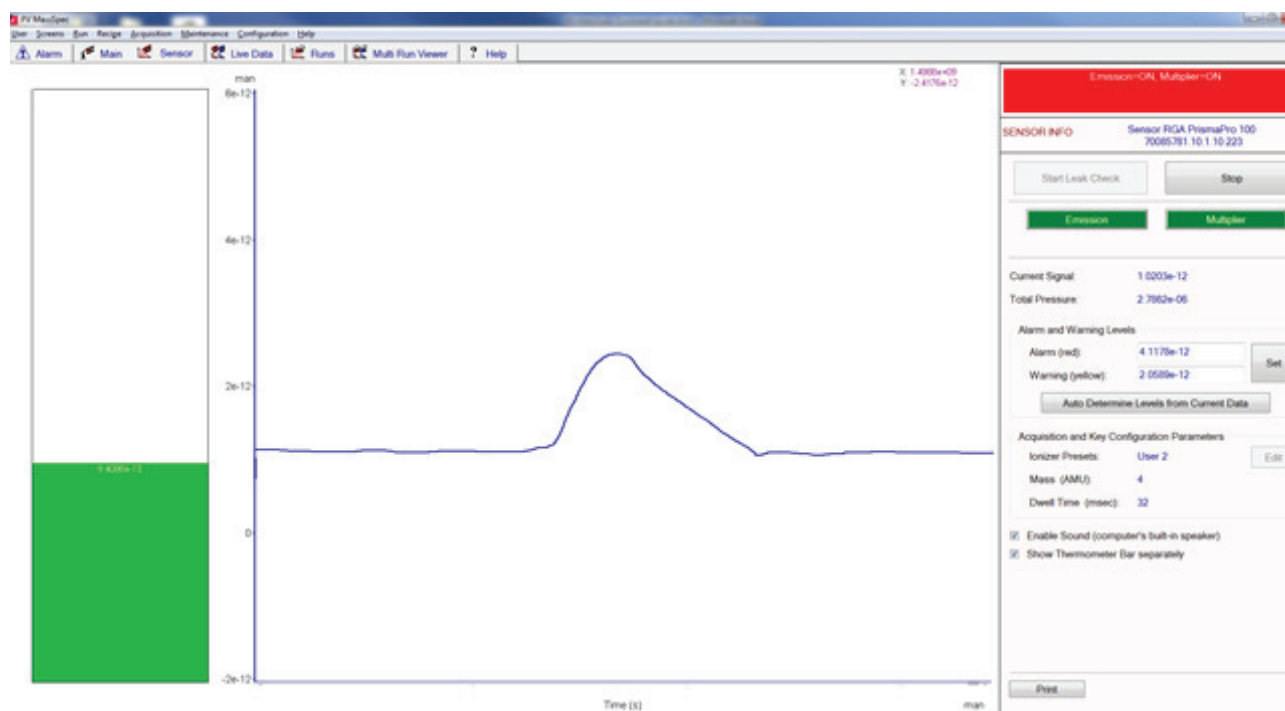


Fig. 10: Monitoring helium or other test gases

Carrying out leak detection with helium or other test gas

If the vacuum analysis indicates an unexpected air leak, you can carry out leak detection with helium or another gas using the "Leak Check" program.

- In the main window (Main), click **"Leak Check"**.
 - Leak Check shows the actual ion current and its chronological sequence for the test gas. You can specify alarm and warning limits, set typical masses for the test gas and type of detector.

2.5 Collecting data (scan and BIN)

There are 2 ways to acquire data: Scan and BIN.

Scan mode

Scan mode scans from a start mass to an end mass and records data for all intermediate masses.

You can configure scan mode so that it records only one measured point (bar graph) per mass, or up to 20 measured points (high resolution scan) per mass.

Regardless of the number of measured points per mass, scan mode also generates a signal at each total mass point to determine a data trend over time (BIN).

BIN mode

BIN mode records data at specific masses only, with other peripheral data.

This allows data to be recorded much more quickly than in scan mode.

2.5.1 Collecting data with the "Quick Monitor"

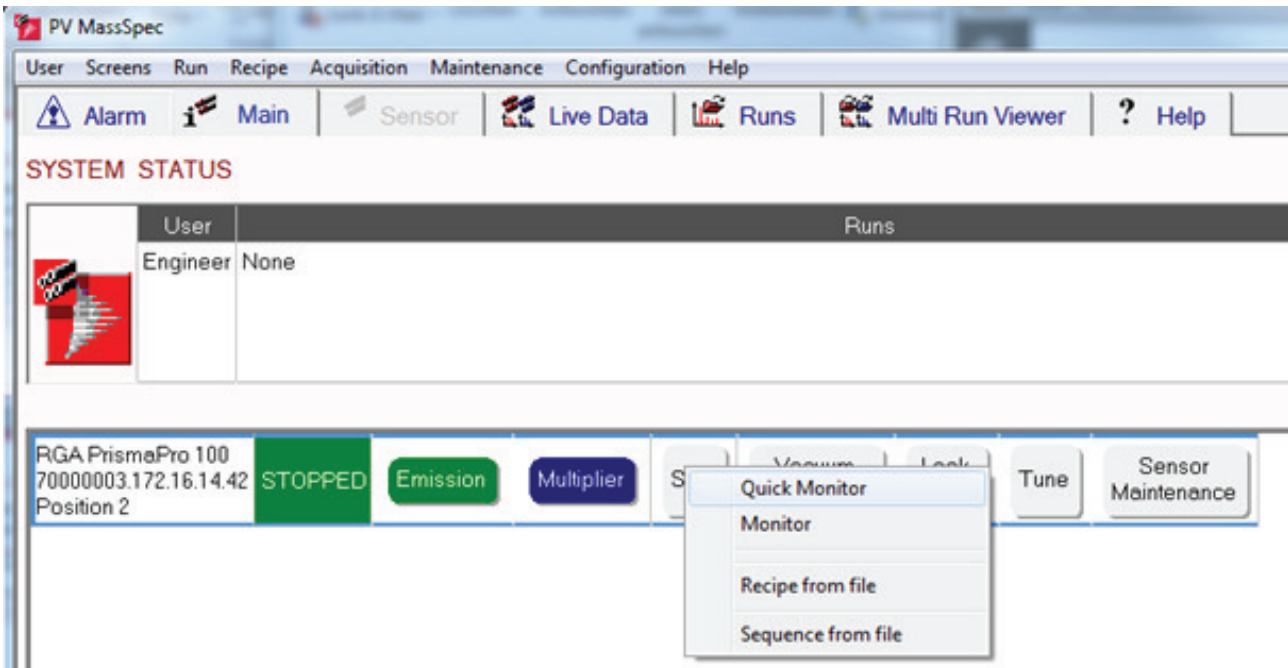


Fig. 11: Quick Monitor

To capture data, you can use the default "Quick Monitor" recipe. This executes a **0–50 u** scan for basic residual gas analysis. Or you can create your own recipe.

Collecting data with the "Quick Monitor"

- ▶ In the main window (Main), click "**Start**" and select "**Quick Monitor**".

2.5.2 Creating a new recipe

Parameter	Step 1
Function	Normal
Ionizer Presets	User 2
Start	
Mode	Immediate
Data Threshold	
Emission	On
Multiplier	Off
Relay 1	Open
Relay 2	Open
Relay 3	Open
Stop	
Mode	Time (s)
Data Threshold	
Maximum Duration (s)	10000
Emission	On
Multiplier	Off
Relay 1	Open
Relay 2	Open
Relay 3	Open
Dwell	
Time (ms)	32
Delay	
Mode	Minimum
Time Between Scans (ms)	8916
Stabilization Time (ms)	0
Correction	
Baseline	Mono
Peak Lock	No

Fig. 12: Acquisition Control

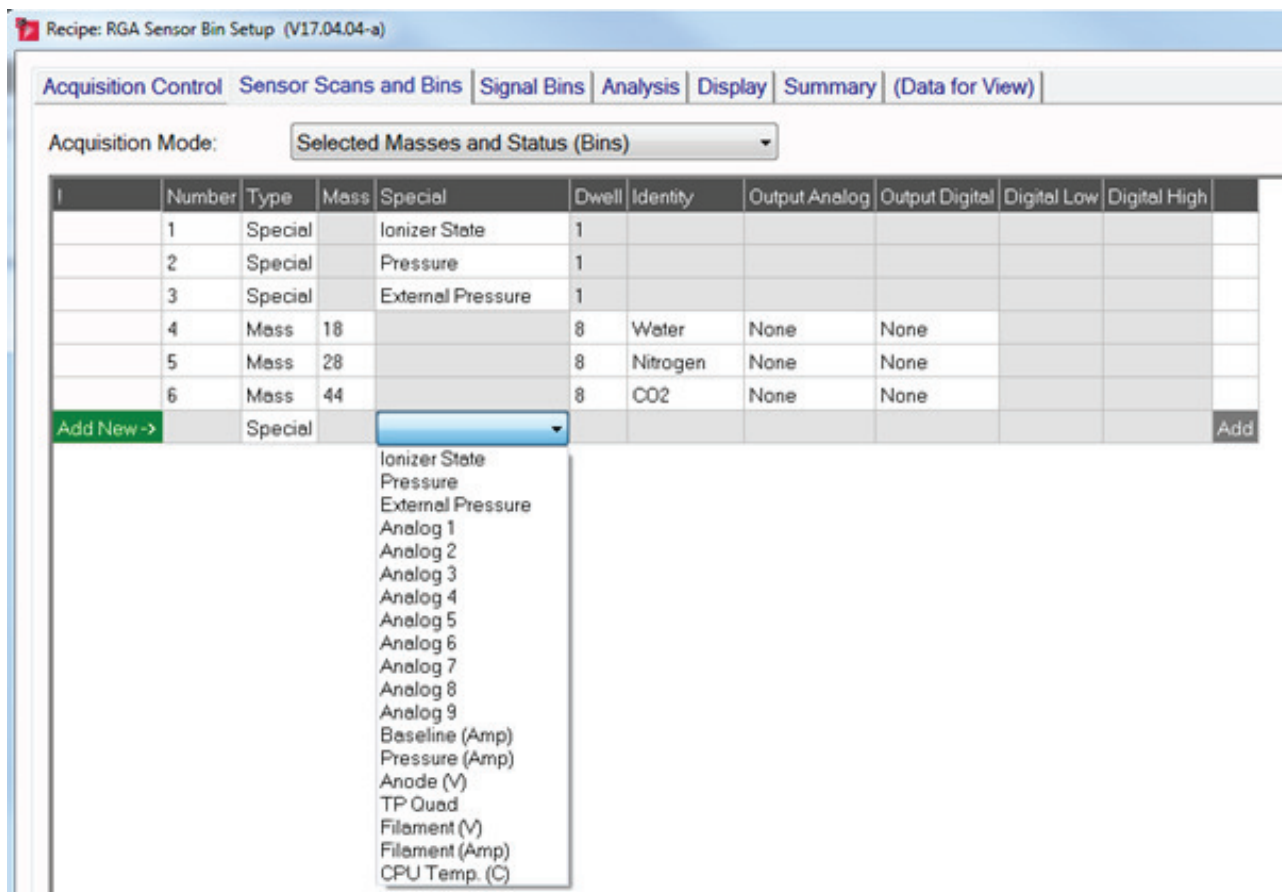


Fig. 13: Selecting masses, total pressure, and device parameters to record

Parameter	Description
Parameter	Add multiple steps that run in sequence.
Function	"Normal" is generally used for data acquisition.
Ionizer Presets	There are 2 sets of ion source settings you may select (e.g., one for high and one for low pressure.)
Start	
Mode	Select from multiple start conditions.
Emission	You can select the emission status.
Multiplier	You can select the EM status. If the EM is switched on, it is used for the scan.
Relay 1	You can adjust the relay output to indicate that the mass spectrum has started on external devices.
Stop	
Mode	Select from multiple stop conditions.
Maximum Duration	Running time for a recipe.
Dwell	
Time (ms)	Dwell is the signal averaging time for each data point (faster = increased noise)
Delay	
(advanced functions)	
Connection	
(advanced functions)	

Tbl. 1: A selection of settings in the Acquisition Control window

Adjustment, setting	Description
Spectrum (Scans)	Data acquisition in scan mode.
Selected Masses and Status (Bins)	Data acquisition in bin mode. In addition to the masses, you can also record total pressure, analog inputs, and device parameter information.
Selected Masses (Restricted Bins)	Data acquisition in bin mode. You can only record the selected masses.

Tbl. 2: Data acquisition modes

Creating a new recipe

1. Switch to the main window (Main) and click "**Recipe > Create From Scratch**".
 - By doing so, you load the default recipe template, from which you can create your own custom recipe.
2. Enter the desired values in the "Acquisition Control" window.
3. Click "**Next**".
4. Select the data acquisition mode in "**Acquisition Mode**".
5. Once you have entered the data for data acquisition, click "**Next**" and navigate to the "**Display**" tab.
 - This operating manual does not deal with "Signal Bins" and "Analysis" here.
6. Click "**Setup**" to change the default settings for the trend display.
7. Select the **elements** that you wish to display on the graph, and the desired **axes parameters**.
8. Then click "**Next**" and navigate to the "**Summary**" tab.
9. Click "**Save**" to save the parameters to a file.

2.5.3 Executing a recipe



Start Once

The software executes the running time specified under "Maximum Duration" in the "Acquisition Control" window once.



Continuous Acquisition

The software executes the running time specified under "Maximum Duration" in the "Acquisition Control" window, and repeats this indefinitely until you stop the cycle manually, or the software reaches another stop limit. The software stores the data for each cycle separately in a file.

Executing a recipe

1. In the main window (Main), click "**Start**" in the respective PrismaPro line.
2. Select "**Recipe from file**".
3. Select the desired recipe and click "**Open**".
4. In the "Recipe: Setup Summary" window, click "**Start Once**" or "**Continuous Acquisition**".
5. If required, update the **Trend Display Settings**.
 - This does not affect data acquisition.
6. In the graph, right click and select "**Export Data**" to export the data in ASCII format; e.g., for a spreadsheet program.
7. Click "**Acquisition Stop**" to stop the cycle.
 - The cycle stops, and the software stores the data file, which remains displayed on the screen for analysis.
8. "**Acquisition Start**" allows you to restart the cycle.

2.6 Analyzing saved data

Default storage location: **C:\Pfeiffer Vacuum\data\MM-DD-YYYY**

You can

- view the chronological sequence
- zoom into diagram areas

- hide and show data
- export data in ASCII format

Analyzing saved data

- ▶ In the menu, click "**Runs > Load Run ***" to load a saved run and evaluate the data.

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