PAView Software

User guide

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1. PREPARATION

1.1. Installation

PAView is the software developed by ALGADE to monitor air sampling devices of the PA300, PA1000, PA1000 GAMMA, PA2000, PSVOL2 type.
PAView will allow you to check, read, and display data recorded by the samplers.
PAView can be downloaded from ALGADE internet website http://www.algade.com, under *downloads*.

⚠️ **The software will operate under Microsoft Windows XP, VISTA, SEVEN**

Install the software according to the following procedure:

Download and unzip the **PAView** Pack, and run the program **Setup.exe**.
Follow the instructions on the screen to choose the setup language and the installation directory.
The files will be installed on the hard drive (it is not necessary to copy the loading program on the drive).
Once setup is complete, paste a shortcut on the desktop if necessary and close all applications using the RS232 serial ports on the computer.

1.2. Using PAView

Important: The device must be activated before any attempt to access it. Activate it if it has gone on standby.
Start **PAView** from the ALGADE desktop shortcut or from the menu toolbar **Start >> Programs >> PAView**.

In the following section, accessible functions will be in **bold**. Access paths are given under the following format: **command1** >> **command2** >> **command3**
For example: **File >> Language >> English**
Functions can be accessed with a mouse click or by **Alt** + **Underlined Letter** then **Underlined Letter**.

The main screen proposes 5 menus:

- Files
- Probe
- Parameters
- Maintenance
- ?

Clicking on one of the authorized menu will open the corresponding screen.

Menu arborescence :

File	Probe	Parameters	Maintenance	?

Default directory
Language **>>** French
              English
Open
Close
Save as
Print
Exit
	Read **>>** Measures
	             Log
	Initialization
	Configuration
	Stop probe
	Port
			Enable Maintenance Mode
			Change Password	

1.3. Basic Configuration

Set the configuration parameters on the computer:

Numbers tab:	The decimal symbol is a dot « . »
Date tab:	The short date format is DD/MM/YYYY
Date separator:	Character « / »

The access path depends on the operating system. The decimal symbol can be changed by the following procedure:

Windows XP:
Start >> Settings >> Configuration Panel >> Customize Regional Options >> Numbers tab >> Decimal Symbol

Windows Vista:
Windows menu >> Configuration Panel >> Regional and Language Options >> Customize this format >> Numbers tab >> Decimal Symbol
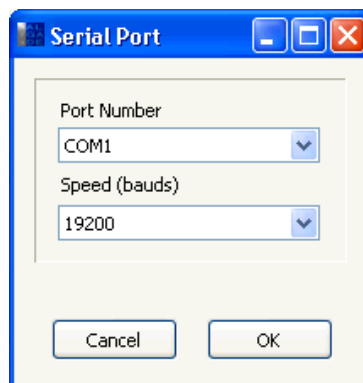
Windows Seven:
Windows menu >> Configuration Panel >> Clock, Language, and Region >> Region and Language >> Additional Settings >> Decimal Symbol
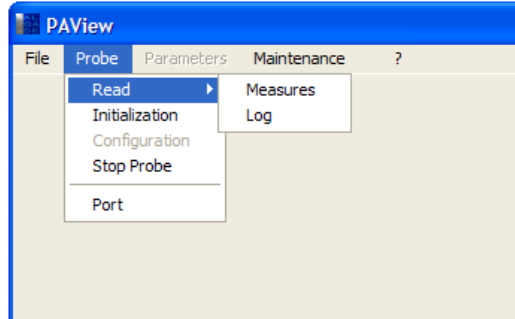
Choose the display language: English or French.

Select **File >> Default directory** to define the directory where data files will be stored.

Set serial port parameters from the menu **Probe >> Serial Port** (COM1 and 19200 by default).

2. PROBE

The Probe menu gives access to the following functions:

- Read → transfers data from the sampler to the PC
- Initialisation → Initialises the sampler according to user settings
- Configuration → can be accessed by entering a **Maintenance** code
- Modbus → for Modbus enabled instruments
- Stop probe → puts the sampler in standby. Reduced power consumption
- Port → defines the serial port and the transfer rate

The standard operating cycle of a sampler is:

- Initialisation
- Sampling
- Stop

The sampler will be linked to the computer by means of the dedicated cable supplied.

In all cases, if the sampler is not linked to the computer the following error screen will appear:
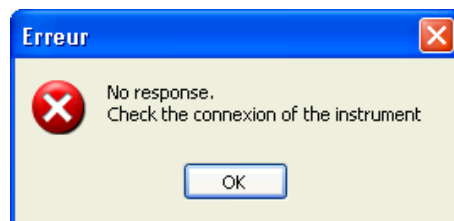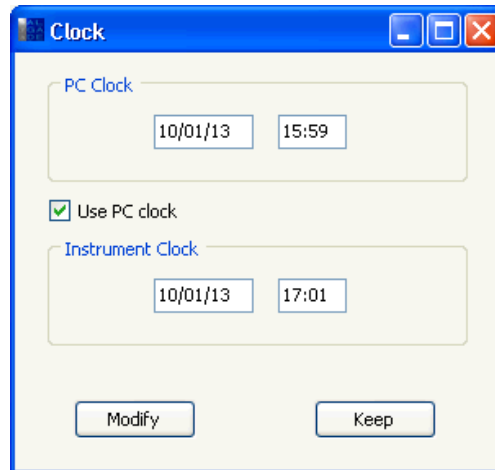
2.1. Sampler initialisation

This command initialises the sampler by following the stages below:

- Date and time setting of the sampler,
- Choice on the operating mode with a possible comment,
- Sampler flash memory reset,
- Input of the settings entered in the sampler's memory
- Measurement start.

Select the menu **Probe** >> **Initialisation**. The date and time window appears :

The window displays the current setting on the sampler as well as on the PC.
It is possible to keep or change the setting of the sampler by ticking the box **Use System Clock**:

- If this box is ticked, the sampler will be initialized with the PC time and date.
- If this box is not ticked, it is possible de enter a different date and time that will be sent to the sampler.

Click on **Modify** to validate the changes or **Keep** to leave settings unchanged.

The window appearing next displays the settings extracted from the sampler in the process of being initialised. Several tabs are available (depending on the type of sampler), from which highlighted fields can be modified.

Probe - Mode - Gamma - Flow - Pressure - Temperature or Battery - Configuration - Misc - Loop

Sampler tab

The PIN code allowing access to the sampler can be modified from this tab.
Soft Version corresponds to the software installed in the sampler.
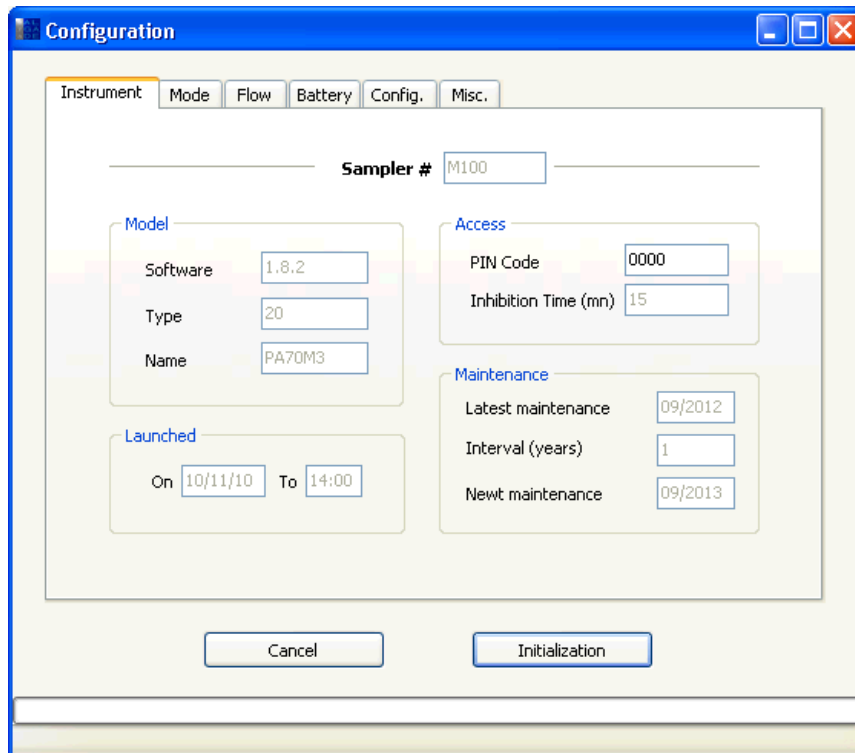
Mode tab

The **Mode tab** allows the selection of the different modes available: Continuous, Program, Timer and Gamma, with the associated settings.
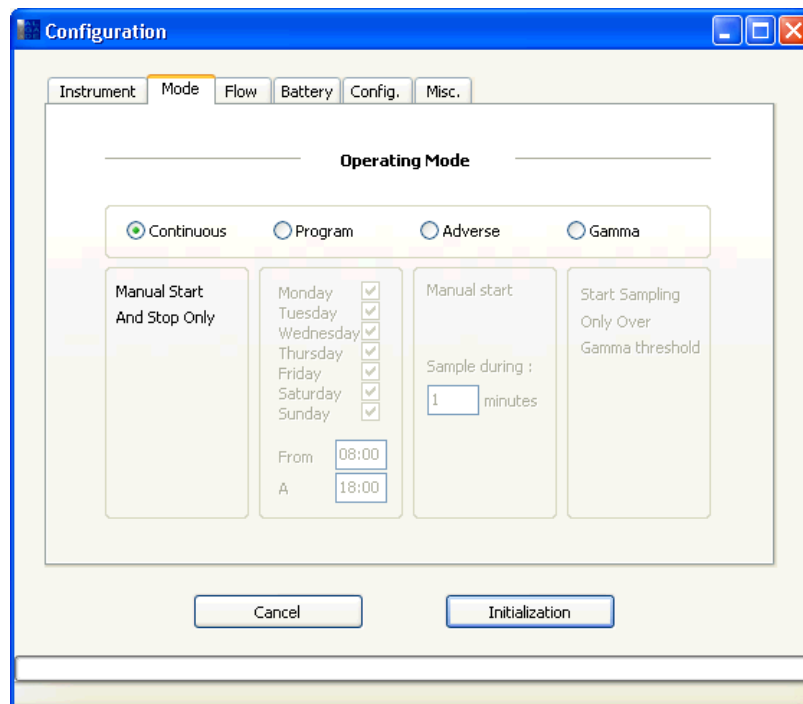
Flow tab

The **Flow tab** allows the setting of a nominal flow rate other than the factory set value.

Configuration tab

The **Configuration** contains operating criteria, only accessible by ALGADE for maintenance operations.

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Misc tab

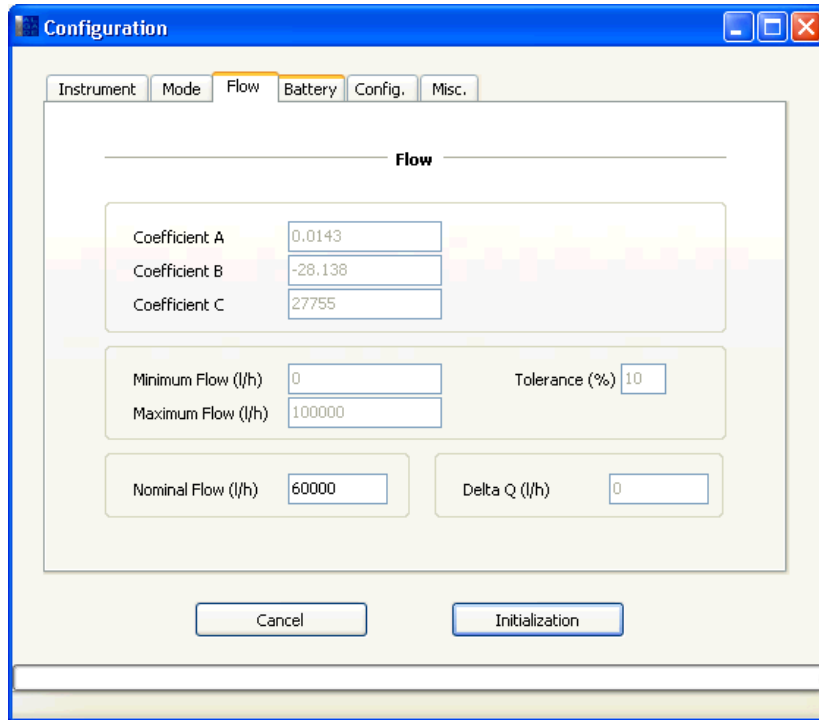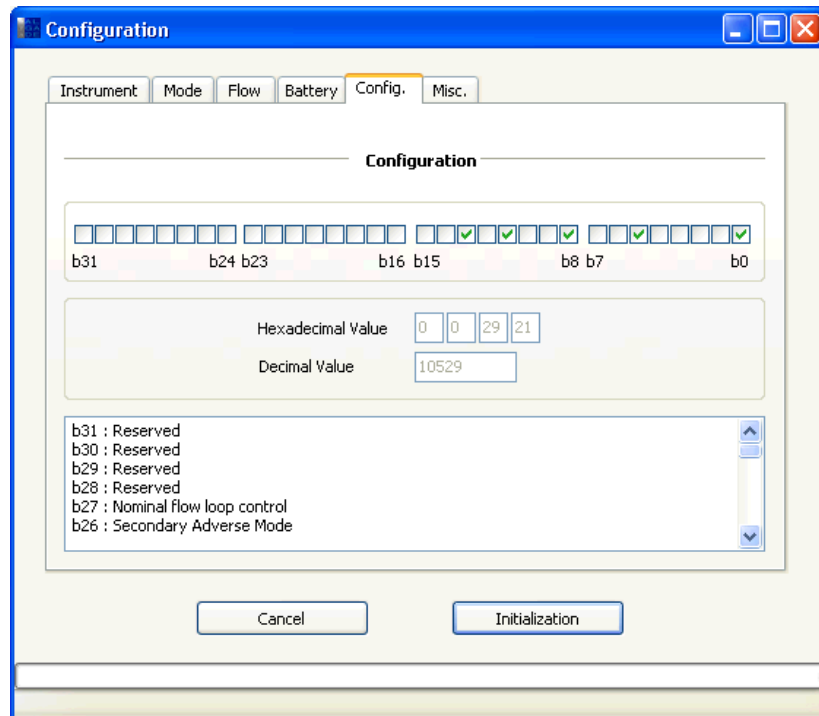The **Misc tab** allows entry of various comments if necessary (sampler location, sampling conditions … etc). The "Hour Meter" section allows to adjust the internal hour meter of the instrument, following a firmware upgrade or a hardware maintenance. In order to set the hour meter value, uncheck the "Keep Current Value" checkbox, then enter the number of days and hours. This functionality is only available on specific devices.
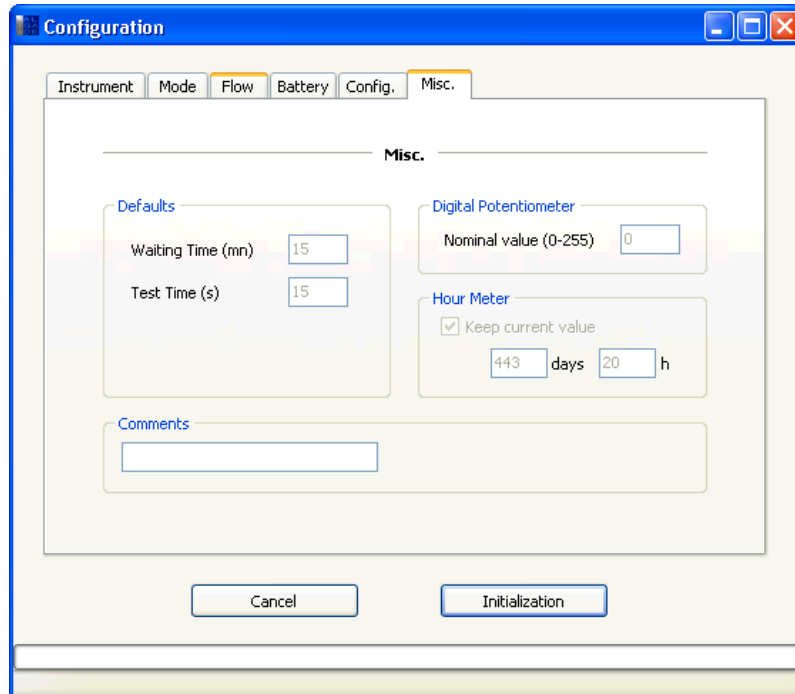
Loop tab

On VAS devices, the nominal flow can be controlled by an external setpoint. The **Loop** tab allows entry of the parameters for this functionality. Please refer to the VAS sampler user manual for detailed explanations about these parameters and how to set them.
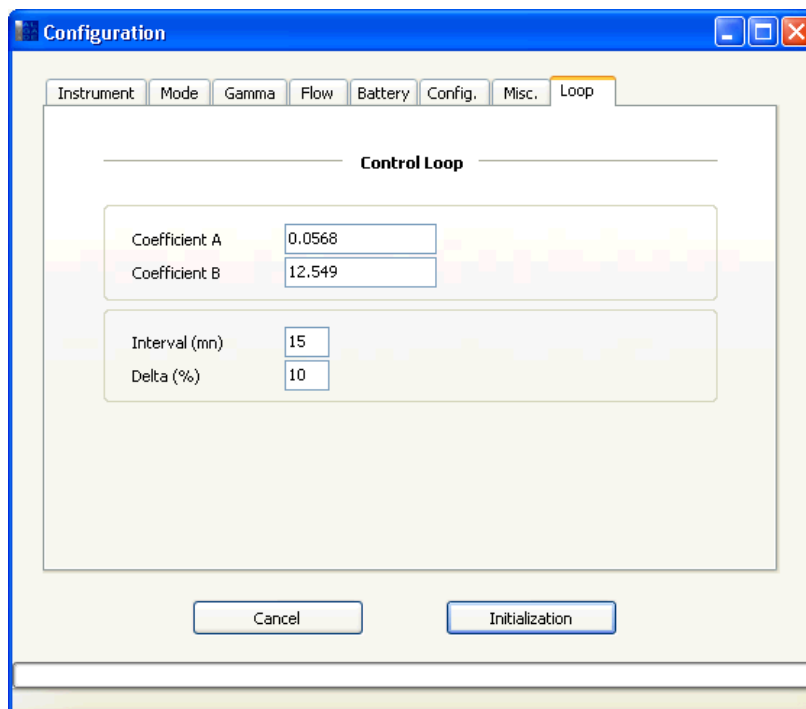
Click on INITIALISATION to start initialising the sampler. The initialisation stages appear at the bottom of the screen (total formatting of the memory flash will last from 10 to 30 seconds according to the amount of measures previously stored)

Once initialisation is complete, remove the connecting cable.

The sampler is ready to be taken to the sampling site.

2.2. Measures readout

To access the measures stored in the sampler memory, connect the sampler (activated) to the PC, and click on the menu *Probe >> Read >> Measures*

The display gives the number of measures to be downloaded. The download progress is indicated by a gauge and by the amount of measures transferred.

A dialog box indicates the end of the download and proposes to disconnect the cable if no other action is desired.

2.3. Log readout

To access the events stored in the sampler memory, connect the sampler (activated) to the PC, and click on the menu *Probe >> Read >> Log*

The display gives the number of events to be downloaded. The download progress is indicated by a gauge and by the amount of events transferred.

A dialog box indicates the end of the download and proposes to disconnect the cable if no other action is desired.

Events codes :

D1	Flow < Minimal flow
D2	Flow > Maximal flow
D3	Pressure < Minimal pressure
D4	Pressure > Maximal pressure
D5	Battery powered : Voltage < Minimal voltage Mains powered : Temperature < Minimal temperature or Temperature > Maximal temperature
D6	Pump current > maximal current
D7	3 PIN code entries
D8	Power cut
D9	Flow malfunction. The device cannot reach the flow setpoint. Sampling continues.
D10	Gamma threshold exceeded. Sampling is initiated. PA1000 GAMMA only.
D11	Gamma sensor malfunction. PA1000 GAMMA only
D20	Sampling ON
D21	Sampling OFF
D22	Reset
D23	Set clock
D24	Set mode
D25	Set nominal flow
D26	Set PIN code

Nota : This functionality is not available with all samplers.

2.4. Stop probe

Probe >> Stop probe will interrupt the measure in progress and place the sampler in a low power consumption mode.

At this stage it is imperative to disconnect the sampler before attempting any new operation.

3. FILE MANAGEMENT

3.1. Saving data

File >> Save as is used to save data being processed, in the text format (.txt).

3.2. Opening an existing file

File >> Open   allows access to a previously saved file.
The content of the default directory will be displayed. Use windows explorer to move the files.

3.3. File format

An example of the format of a data file is given below. It can be opened with Word or Excel.

File example:

The first part, named **HEADER,** contains the entire list of the sampler's settings, and varies in length according to the model of sampler in use.

The second part, named **MEASURES**, displays the values obtained for each measure saved.

```
Probe Soft V2.4  Counter=0
HEADER
PROBE_TYPE        20
PROBE_NUMBER      K116
PIN_CODE 0
LAUNCH_HOUR       15:51
LAUNCH_DATE       13/01/2009
PROG_MODE         0
START_HOUR        08:00
STOP_HOUR         17:00
MONDAY    0
TUESDAY   0
WEDNESDAY         0
THURSDAY 0
FRIDAY    0
SATURDAY 0
SUNDAY    0
PROBE_NAME        PA1000
NOMINAL_POT       0
CONFIG_BYTES      280881
Q_COEFC -158.76
Q_COEFB -0.103
Q_COEFA 0.000272
Q_MIN   750
Q_MAX    1500
Q_NOMINAL         1000
P_COEFC 0
P_COEFB 1
P_COEFA 0
P_MIN    0
P_MAX    100000
TEMP_DELAY        1
N_COEFC -50
N_COEFB 0.1
N_COEFA 0
N_MIN    0
N_MAX    12000
RESERVED
I_COEFC 0
I_COEFB 1
I_COEFA 0
I_MIN    0
I_MAX    100000
DEF_WAIT_TIME     15
DEF_TEST_TIME     15
INHIBIT_TIME      15
LATEST_MAINT      janv-09
NEXT_MAINT        janv-11
INTERVAL 2
COMMENTS
```

```
MEASURES
N°  Date       Hour      Flow(l/h)  P(mbar)  Batt(V)  I(mA)  P.Stat  Pot.  Volume(l)  G.Stat  Gamma(1E-6 Sv/h)
0   19/04/11   15:56:02  1445.6     0        12.4     0      257     174   24.09      0       0.276
1   19/04/11   15:57:02  1440.4     0        12.4     0      257     175   48.10      0       0.287
2   19/04/11   15:58:02  1445.6     0        12.4     0      257     176   72.19      0       0.303
3   19/04/11   15:59:02  1461.4     0        12.4     0      257     177   96.55      0       0.285
4   19/04/11   16:00:02  1466.6     0        12.4     0      257     178   120.99     0       0.295
5   19/04/11   16:05:17  1450.9     0        12.4     0      257     177   145.17     0       0.317
6   19/04/11   16:06:17  1461.4     0        12.4     0      257     178   169.53     0       0.325
7   19/04/11   16:07:17  1466.6     0        12.4     0      257     179   193.97     0       0.286
8   19/04/11   16:08:17  1477.2     0        12.4     0      257     180   218.59     0       0.317
```

3.4. Print

Printing the display screen is available via the menu **File >> Print**. The printer configuration is achieved by the standard Windows panel.

4. MODBUS

4.1. About physical interfaces

ALGADE samplers can be equipped with RS485 or RS232 interface.
Computer serial ports are in most cases equipped with RS232 interface.

⚠️ *Do not connect a computer serial port directly to a RS485 sampler !*

Connecting a RS485 sampler to a computer serial port requires ALGADE USB/RS485 module (ref. P-590-107).

4.2. About communication protocols

ALGADE samplers are equipped with the following communication protocols :

- The MODBUS industrial standard protocol
- A vendor specific SERIAL protocol

The MODBUS or SERIAL protocol can be selected in the PARAMETERS menu on the sampler LCD screen.
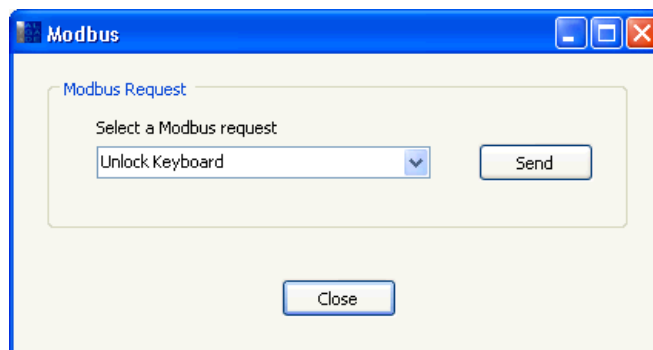
4.3. Using Modbus functionality

📝 *The MODBUS protocol must be selected in the PARAMETER menu of the sampler LCD screen.*

In the **Instrument >> Modbus** menu, basic MODBUS commands can be transmitted to the sampler :

- Lock/unlock keyboard
- Start/Stop sampling
- Volume reset
- Solenoid Valve command (for instruments equipped with this option)

5. MAINTENANCE

The configuration panel is accessible by an identification code, and allows modification of all internal parameters of the sampler, on each tab of the Configuration panel.

Use configuration panel with care !,Bad settings can cause serious malfunctions of the sampler ! This functionality must only be used by qualified personnel, for calibration and maintenance operations.

By default, PAView is on **User** mode (lower access level). During initialization of a sampler, only basic parameters, such as PIN code, or sampling mode, can be set.

In order to perform maintenance operations, some advanced parameters, such as flow calculation coefficients, must be adjusted. This is only possible when PAView is on **Maintenance** mode (higher access level).

*The default password is : **sesame***

5.1. Changing the maintenance password

Select the **Maintenance > Change password** menu.
Enter the current password.

Then, enter the new password, twice, and press OK.

5.2. Activating the maintenance mode

Select the **Maintenance > Enabled maintenance mode** menu and enter the password.

At this point, the following parameters can be set :

- Flow calculation coefficients a, b, c
- Latest maintenance date

5.3. Setting the advanced parameters of the sampler

The SERIAL protocol must be selected in the PARAMETER menu of the sampler LCD screen.

Enable the maintenance mode, then, select the **Instrument > Configuration** menu.

At this point, it is only possible to read the parameter from the sampler (Read button), or load a parameter file (Load button).

The Write and Save buttons are only accessible when one of these two actions has been done.

Then, modify the parameters as needed, and write the new parameters into the sampler (Write button) or save the new parameter file (Save button).
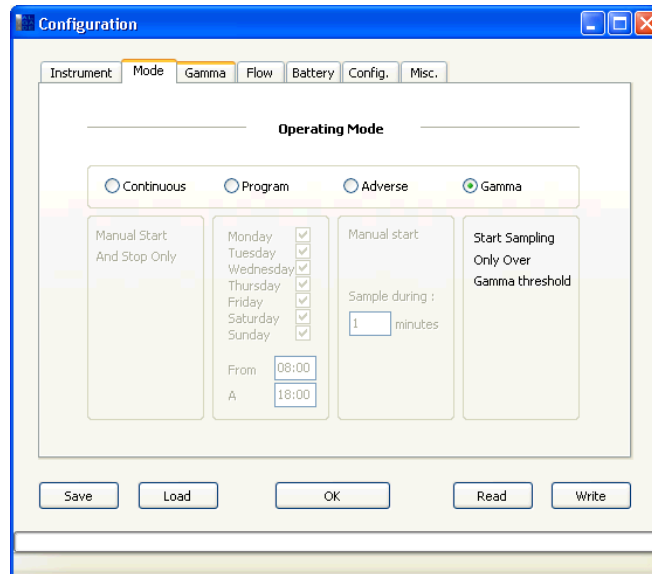
6. INFORMATIONS (?)

7. GAMMA MODE

PA1000 Gamma samplers are equipped with an onboard gamma probe. On these instruments, a particular mode will automatically trigger sampling when a predetermined Gamma threshold is exceeded.

7.1. Configuration

During the initialisation stage described in section 2.1, the **Mode** tab allows the selection of the operating mode:

The Gamma tab displays the sampler's internal specifications (not modifiable) and allows selection of parameters specific to the PA1000 GAMMA (These parameters can also be directly modified on the sampler by means of its keypad) :

- Gamma threshold in µSv/h triggering sampling in <PROG> et <GAMMA> modes

- Sampling duration in minutes, in the event of a threshold trigger in <PROG> et <GAMMA> modes

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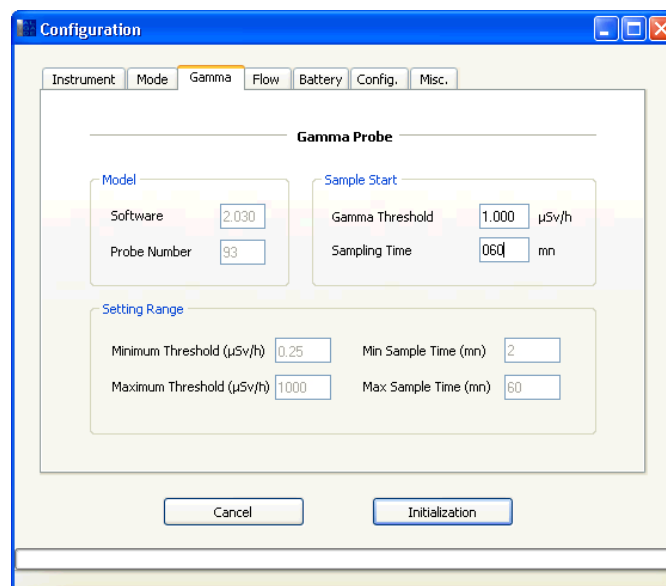
7.2. Memory readout

After a cycle of measures, to access the data stored in the sampler memory, connect the sampler (activated) to the PC, and click on the menu ***Probe >> Read >> Measures***

The display gives the number of measures to be downloaded. The download progress is indicated by a gauge and by the amount of measures transferred.

A dialog box indicates the end of the download and proposes to disconnect the cable if no other action is required.

Example of a file obtained after a sampling of 5 minutes and a threshold at 0.8 µSv/h :

```
N°  Date      Hour      Flow(l/h)  P(mbar)  Batt(V)  I(mA)  P.Stat  Pot.  Volume(l)  G.Stat  Gamma(1E-6 Sv/h)
0   22/04/09  16:03:53  0          0        12.4     0      0       0     0          0       0.288
1   22/04/09  16:04:53  0          0        12.4     0      0       0     0          0       0.294
2   22/04/09  16:05:53  0          0        12.4     0      0       0     0          0       0.320
3   22/04/09  16:06:53  0          0        12.4     0      0       0     0          0       0.295
4   22/04/09  16:07:53  0          0        12.4     0      0       0     0          0       0.308
5   22/04/09  16:08:53  0          0        12.4     0      0       0     0          0       0.447
6   22/04/09  16:09:53  0          0        12.4     0      0       0     0          0       0.548
7   22/04/09  16:10:53  0          0        12.4     0      0       0     0          0       0.619
8   22/04/09  16:11:53  0          0        12.4     0      0       0     0          0       0.758
9   22/04/09  16:12:53  0          0        12.4     0      0       0     0          1       0.868
10  22/04/09  16:13:56  1445.6     0        12.4     0      257     100   24.09      1       1.143
11  22/04/09  16:14:56  1440.4     0        12.4     0      257     101   48.10      1       1.267
12  22/04/09  16:15:56  1445.6     0        12.4     0      257     102   72.19      1       1.354
13  22/04/09  16:16:56  1461.4     0        12.4     0      257     103   96.55      1       1.395
14  22/04/09  16:17:56  1466.6     0        12.4     0      257     104   120.99     1       1.353
15  22/04/09  16:18:56  0          0        12.4     0      0       0     120.99     1       1.358
16  22/04/09  16:19:56  0          0        12.4     0      0       0     120.99     1       1.468
17  22/04/09  16:20:56  0          0        12.4     0      0       0     120.99     1       1.344
18  22/04/09  16:21:56  0          0        12.4     0      0       0     120.99     1       1.357
```

Interpretation:

The cycle was started at 16:02:53. The first measured occurred one minute later.

The sampler's status (P.Stat) at 0 indicates that the pump is stopped. The volume remains at 0. The status of the integrated Gamma probe (G.Stat) at 0 indicates that the threshold has not been exceeded.

At 16:12:53, the Gamma threshold exceeds the preset threshold value (G.Stat goes to 1). Sampling starts; it takes a few seconds for the pump to reach the preset flow. Sampling actually begins at 16:12:56.

After a minute, from 16:13:56, the volume is incremented; the status at 1 indicates that the pump is on.

At 16:17:56, sampling stops, the status reverts to 0 and the volume sampled remains the same. Recording of ambient Gamma levels is ongoing every minute.