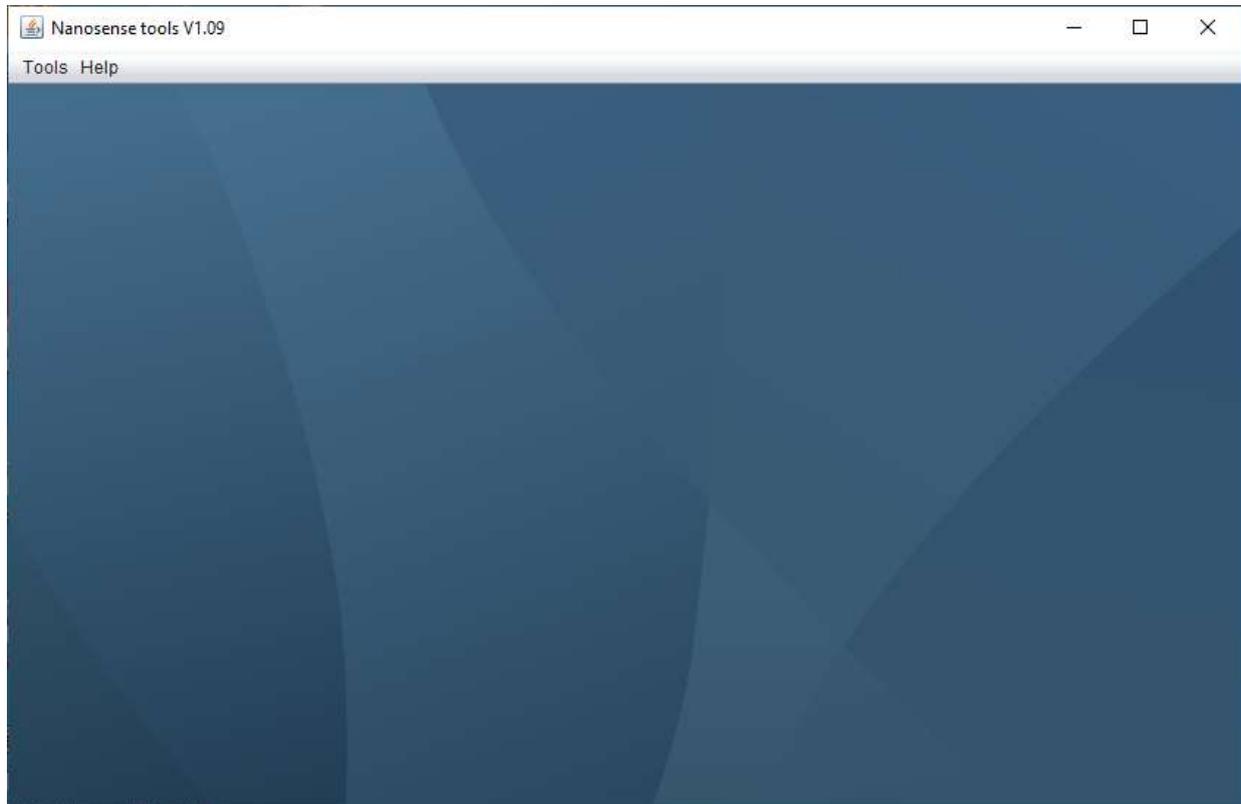


NanoSense Java tool Tools help guide

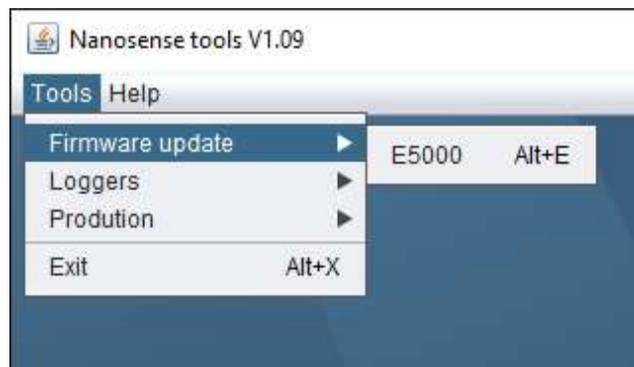
NS_Tools (NanoSense tools) regroups several facilities used by our probes, as:

- Update firmware function.
- Data logging.
- Production options for tests and address reset.

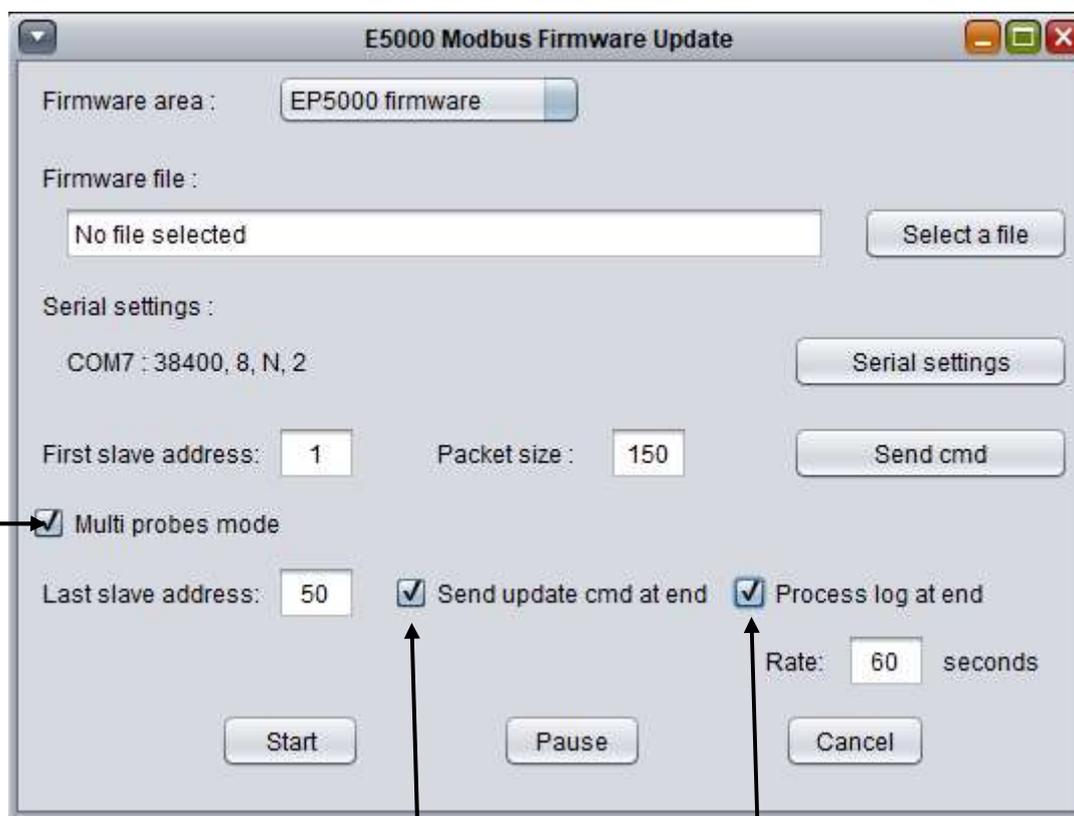


The firmware of some of our probes and sensors modules can be update:

- Select tools.
 - Firmware update.
 - Select the device type to update.



Firmware update:



This option activates the multi programming or command sending possibility

Send update command to all the selected probes at the end of the firmware transfer (available only if "Multi probes mode" is selected)

Process log of all the selected probes with the selected rate at the end of the firmware transfer (available only if "Multi probes mode" is selected)

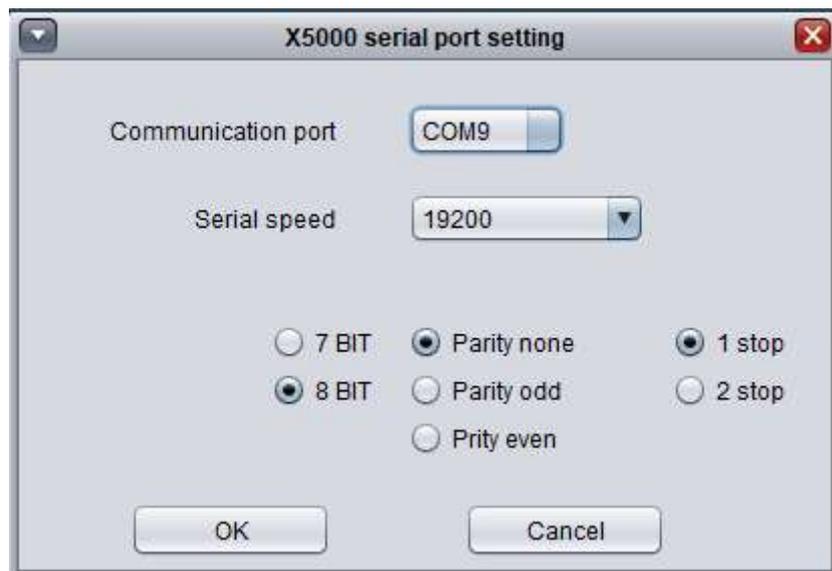
When “Multi probes mode” is checked:

- When programming: each probe between the first and the last address will be processed one after the other
- When sending command: the command will be sent to one probe at the time, from the first to the last address.
-

Note that when “Process log at end” is checked, the log begins 20 seconds after the previous action to ensure this one is ended.

For updating an EP5000 probe or a MOX (Metal Oxide) sensor module, you shall:

- ➔ Select the probe type or a sensor module in firmware area you want to update.
- ➔ Select the “.bin” file you want to use for the update.
 - Click “Select a file” to choose the one you want to use
- ➔ Indicate the ‘Slave address’ of the device to update (upload can’t be done in broadcast as acknowledgement are necessary during this process). Apply to sensor modules as mounted on a probe with a ModBus address
- ➔ Set up the serial communication port if necessary:
 - Click on “Serial settings”



Click on start when ready to upload the firmware.

The new firmware will be transferred to an external (external to the MCU) flash memory into the probe. It will not erase the current firmware.

To be noted that this external flash also contains by default a factory firmware version.

A CSV file containing the report of the file transfer is generated in the “.bin” file directory:

Time	Date	Address	Firmware	Not present	OK	Error
20220512_13_32_48		1	D:\Test\PO EP5000\E5000_KNX_Modbus_L4_5.9.bin	X		
20220512_13_37_12		2	D:\Test\PO EP5000\E5000_KNX_Modbus_L4_5.9.bin		X	
20220512_13_37_14		3	D:\Test\PO EP5000\E5000_KNX_Modbus_L4_5.9.bin	X		
20220512_13_37_15		4	D:\Test\PO EP5000\E5000_KNX_Modbus_L4_5.9.bin	X		

When upload ended click on ‘send cmd’.



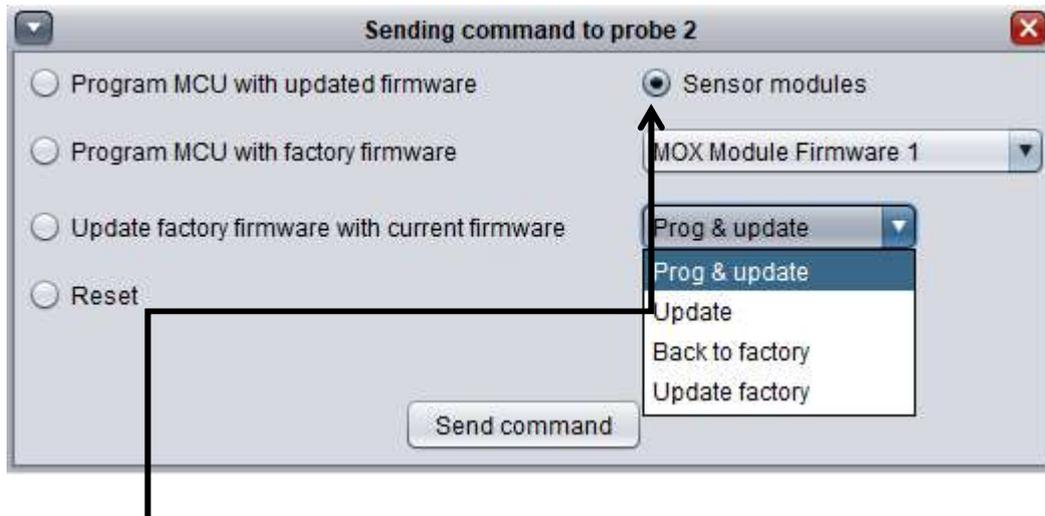
This dialog box offers you 4 choices:

- Program the MCU with updated firmware by writing the update firmware stored in external flash as current firmware into the MCU flash (will overwrite current firmware).
- Program the MCU with factory firmware by writing the factory firmware stored in external flash as current firmware into the MCU flash (will overwrite current firmware).
- Update factory firmware by writing the current firmware stored into the MCU as factory firmware into the external flash (will overwrite former factory firmware).
- Reset to restart the probe.

Display when "Multi probes mode" checked:

The screenshot shows a dialog box with the title "Sending command to probes from 2 to 50". It contains the following elements:

- Radio button: Program MCU with updated firmware
- Radio button: Program MCU with factory firmware
- Radio button: Update factory firmware with current firmware
- Radio button: Reset
- Radio button: Sensor modules
- Dropdown menu: MOX Module Firmware 1
- Dropdown menu: Prog & update
- Button: Send command



➔ For MOX sensor modules, up to 3 different firmware, can be stored in the external flash, then four operations can be executed:

- Transfer the selected firmware to the sensor module and process to the update when done.
- Programming the sensor module with the selected Update firmware stored in its own external flash.
- Programming the sensor module with the Factory firmware stored in its own external flash.
- Updating the Factory firmware of the module with its current firmware.

Examples of the different firmware:

- VOCT
- VOCT+ Sulphurous odours
- VOCT+ Sulphurous odours + Ozone
- VOCT+ Sulphurous odours + Ozone +NOx
- Ozone + NOx

Data loggers:

→ Select tools

○ Loggers

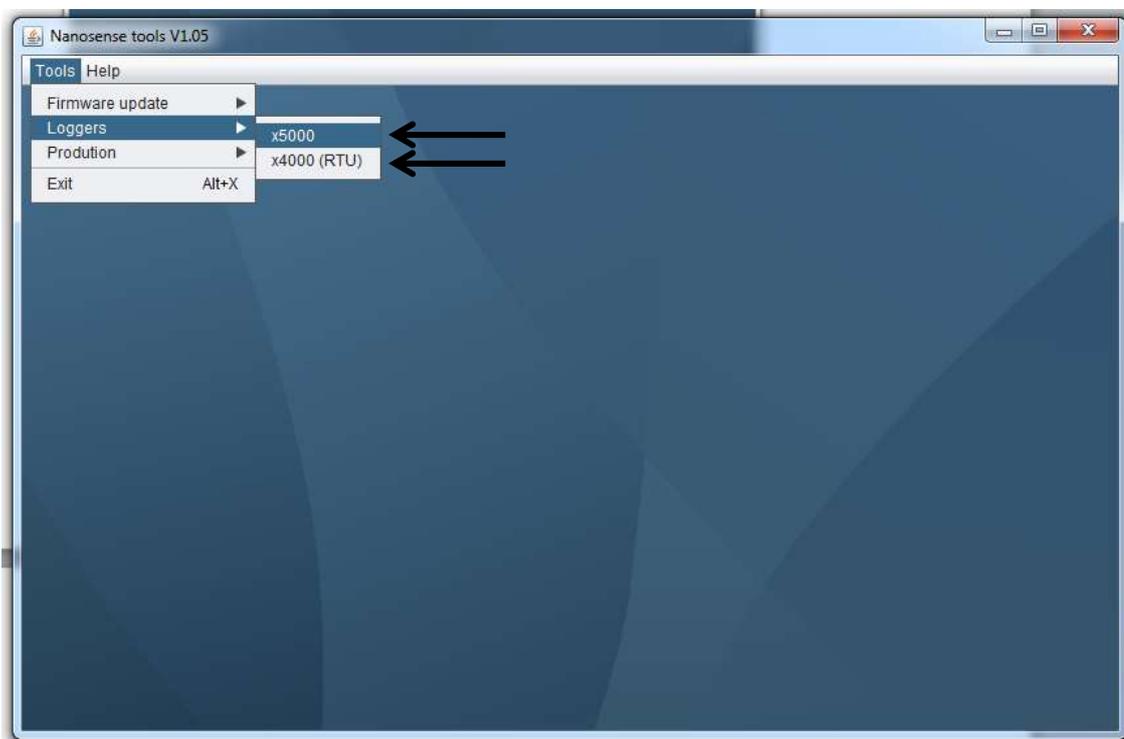
- The select kind of probe you want to log.

If you select X5000, you can log:

- EP5000 probes
- AAQ probes

If you select X4000, you can log:

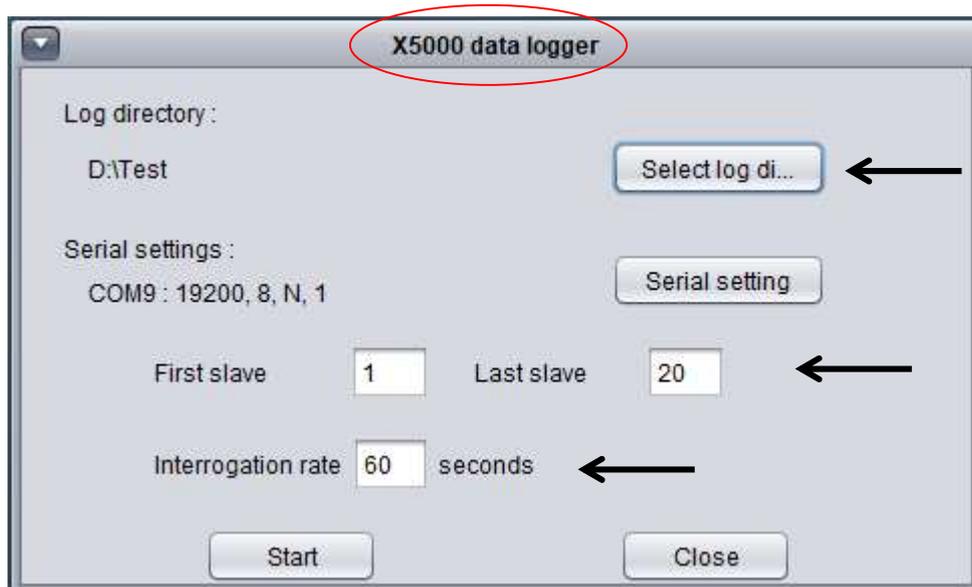
- E4000NG probes
- P4000NG probes



Note that you can:

- Plug EP5000s and AAQs on the same bus.
- Plug E4000NG and P4000NG on the same bus.
- Setup one serial port for X5000s.
- Setup another serial port for X4000s.
- The probes that are on the same bus have to be set with the same baud rate.

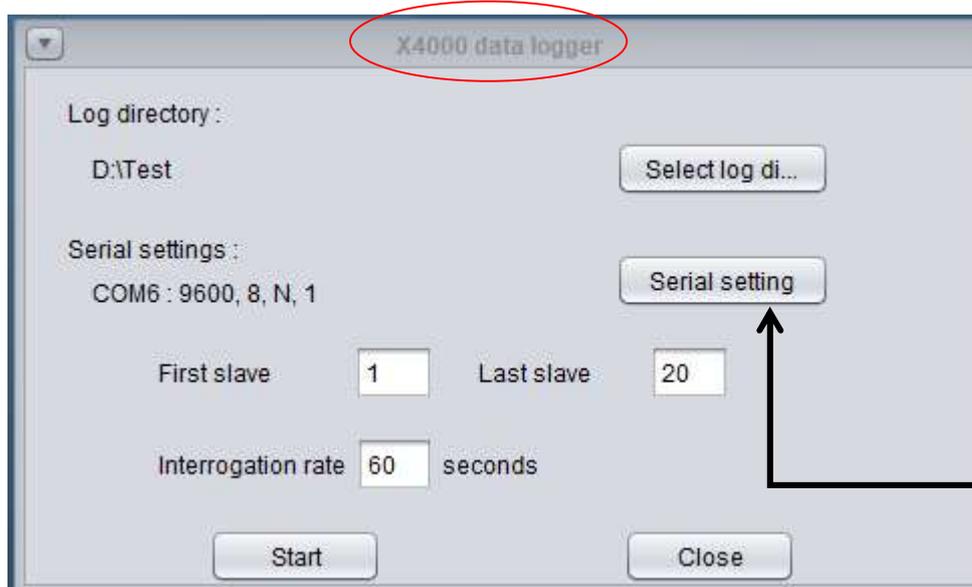
After selecting the probe type, a screen appears to set the data transmission between the data logger and the probe.



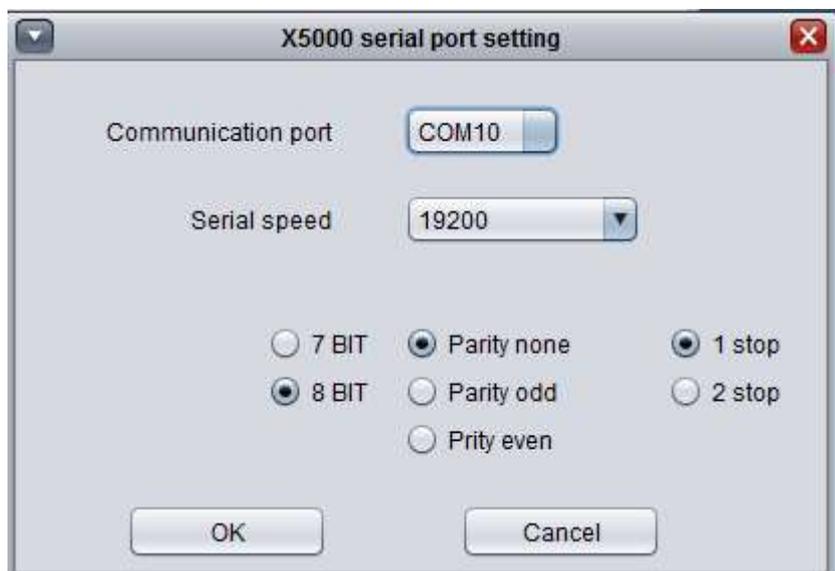
Select the directory where you want the log file to be saved.

The data logger will interrogate addresses between those limits

The delay between two slaves is 1.5 second, so if you want to log 4 slaves, the interrogation cycle will take 6 seconds. You can select a longer cycle rate here. A shorter cycle selection will be adjusted automatically.



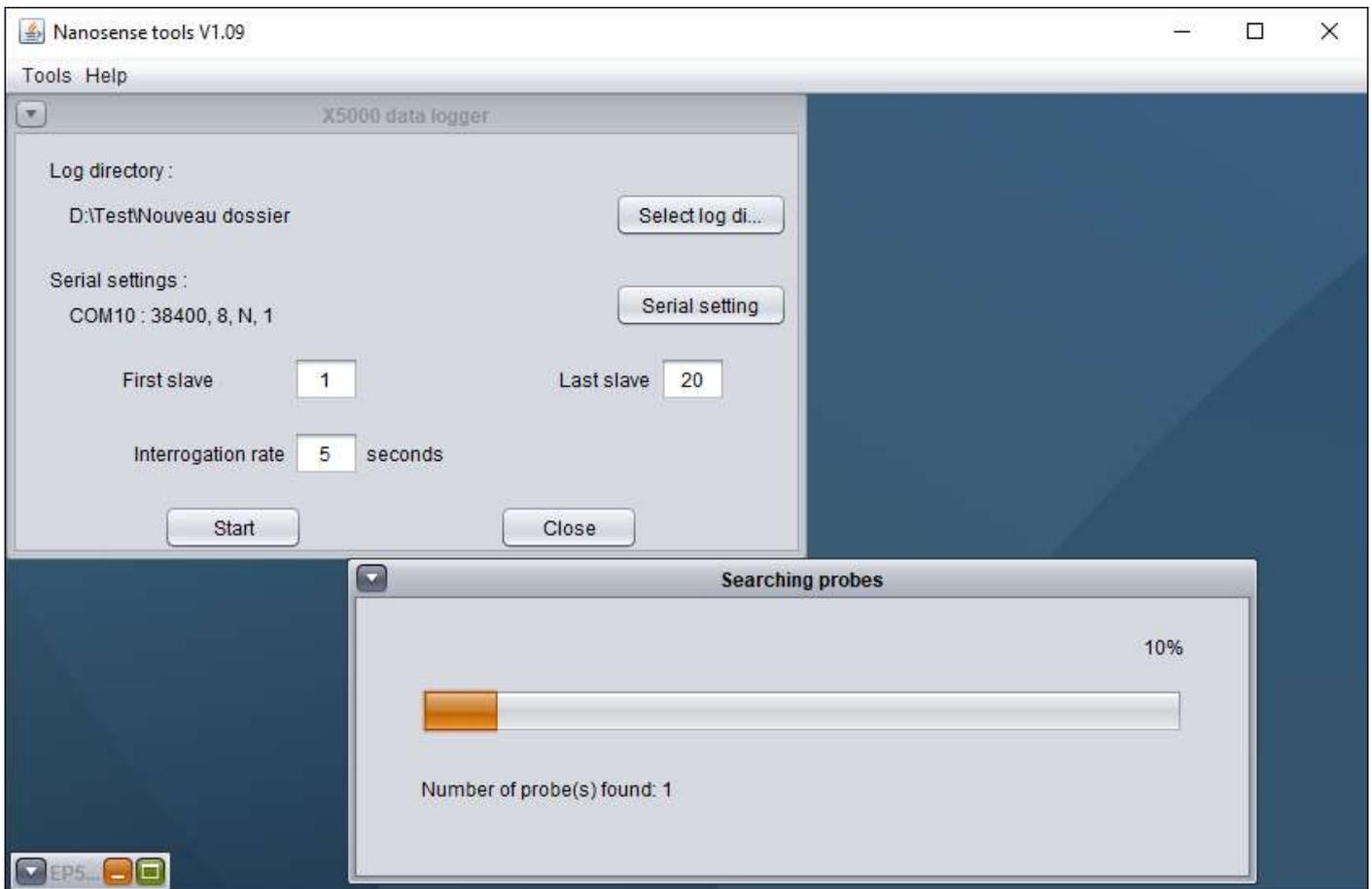
«serial setting» allows to have all settings related to the Modbus to ensure the success transmission of information



Note that:

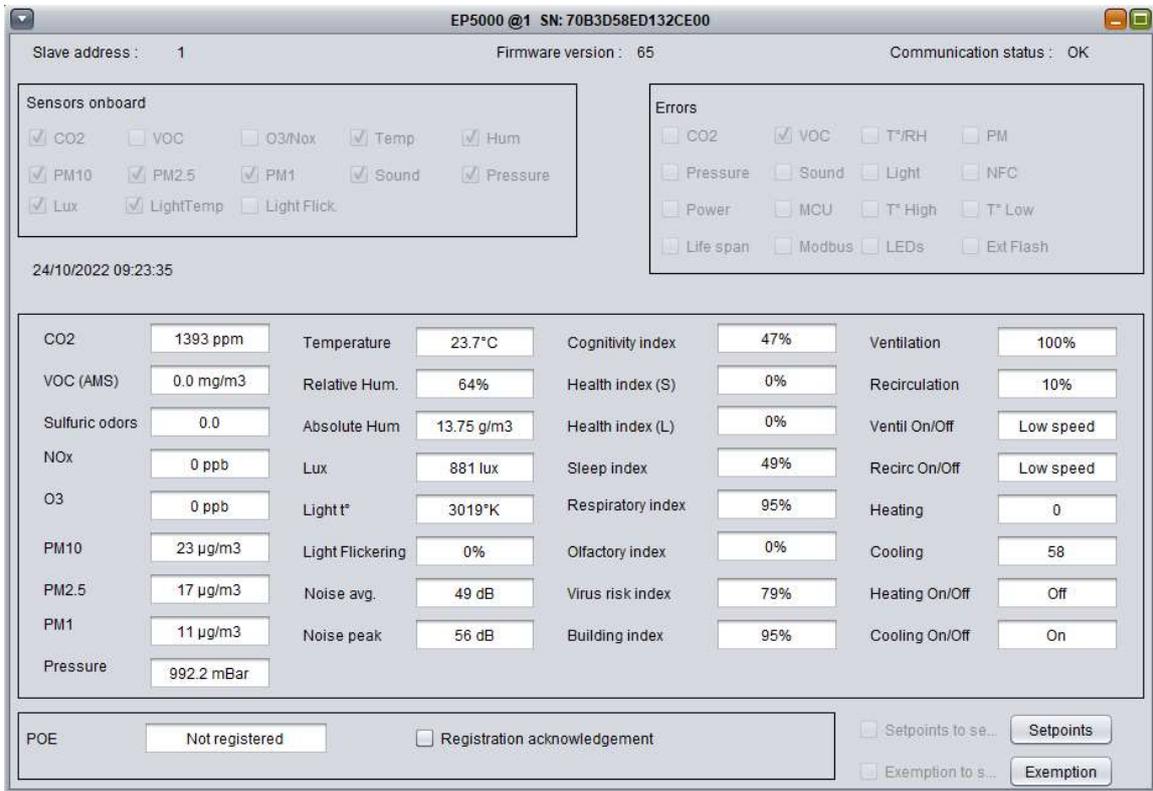
- The name of the file will be automatically generated:
YYYYMMDD_hh_mm_ss_probe.csv, example: 20210309_11_33_47_Ep5000.csv

Pressing START will launch the scan of the probes addresses.

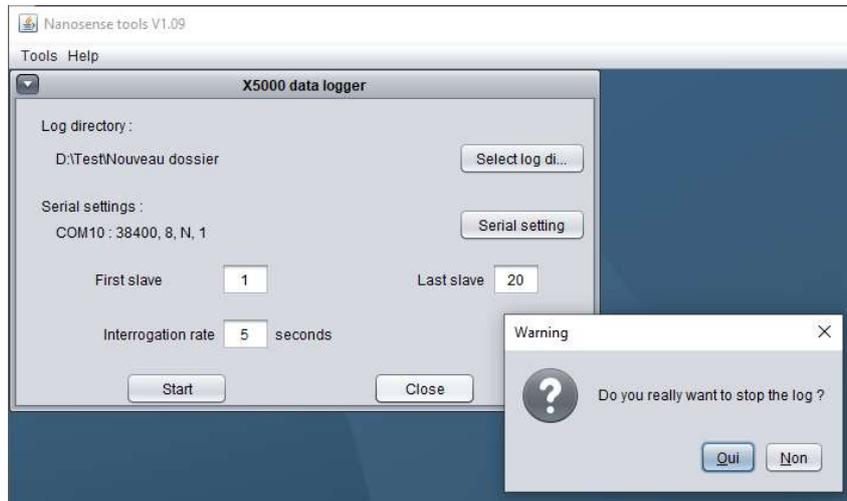


Each discovered probe appeared on the bottom of the desk window. If you click on the red button, it will display the data of the probe.

Example of a log window (EP5000):



To stop the log, click on CLOSE button and select 'Yes' to close the data logger.

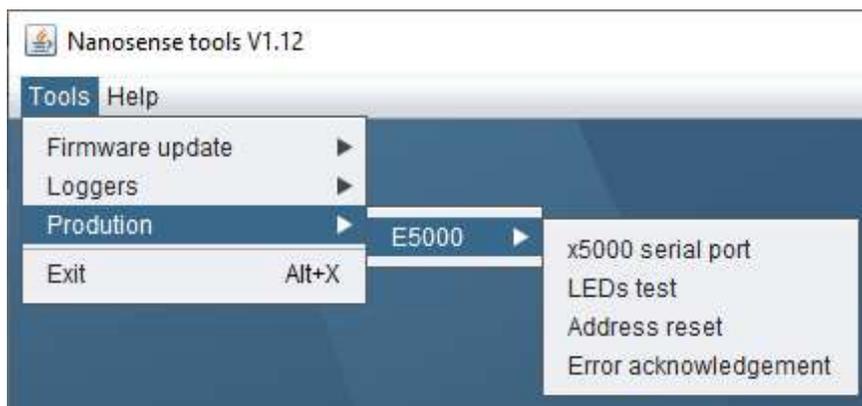


The CSV file is located in the log directory you have selected.

Example of an EP5000 CSV file:

Time Date	Address	Firmware	CO2 ppm	VOC (mg/m	Sulfuric odc	NOX (ppb)	O3 (ppb)	PM10 (µg/m	PM2.5 (µg/r	PM1 (µg/m:	Pressure (m	Temperatur	RH (%)	Absolute h	Lux	Light temp
06/04/2021 11:22:27	1	37	634	0.179	0.0	0	0	6	5	4 51.4	22.4	40	7.97	131	6864	
06/04/2021 11:22:32	1	37	634	0.179	0.0	0	0	6	5	4 51.4	22.4	40	7.97	143	7054	
06/04/2021 11:22:37	1	37	633	0.179	0.0	0	0	6	5	4 51.4	22.4	40	7.97	139	7007	
06/04/2021 11:22:42	1	37	633	0.179	0.0	0	0	6	5	4 51.4	22.4	40	7.97	134	6950	
06/04/2021 11:22:47	1	37	632	0.173	0.0	0	0	6	5	4 51.4	22.4	40	7.97	135	6957	
06/04/2021 11:22:52	1	37	632	0.173	0.0	0	0	6	5	4 51.4	22.4	40	7.97	135	6993	
06/04/2021 11:22:57	1	37	632	0.173	0.0	0	0	6	5	4 51.4	22.4	40	7.97	143	7133	
06/04/2021 11:23:02	1	37	632	0.173	0.0	0	0	6	5	4 51.4	22.4	40	7.97	136	7028	
06/04/2021 11:23:07	1	37	633	0.17	0.0	0	0	6	5	4 51.4	22.4	40	7.97	137	7034	
06/04/2021 11:23:12	1	37	633	0.17	0.0	0	0	6	5	4 51.4	22.4	40	7.97	147	7126	
06/04/2021 11:23:17	1	37	633	0.17	0.0	0	0	6	5	4 51.4	22.4	40	7.97	137	7064	
06/04/2021 11:23:22	1	37	633	0.17	0.0	0	0	6	5	4 51.4	22.4	40	7.97	145	7099	
06/04/2021 11:23:27	1	37	632	0.17	0.0	0	0	6	5	4 51.4	22.4	40	7.97	142	7070	

Production options:



These options are available only for the EP5000 probes.

- x5000 serial port: to modify the serial port settings
- LEDs test:



Can be used for LEDs testing and for probe localisation.

For LEDs testing:

- o Click on remote.
- o Select the LEDs to be turn on.
Then click on send.

If remote is not check, LEDs will be driven by the probe.

For localization:

- Uncheck "Broadcast".
 - Select the probe address to be localized.
 - Check localized.
 - Click on "Send".
-
- Address reset: Send a command to set all the probes address on the bus to address '1'.

 - Error acknowledgement: Send acknowledgment error.