

Autolab Application Note AUT01

Automated Sample Handling and Analysis With NOVA: Autolab in Combination With Metrohm Liquid Handling

Keywords

Sample processor; Automatic sample handling; Metrohm devices; Automatic burette

Summary

Automatic sample handling and analysis is very convenient for routine measurements on large number of samples. Beyond the obvious time benefit, automatic sample handling solutions also reduce the risk of errors and contamination and reduces exposure to the chemical environment.

Metrohm offers a wide range of high performance liquid handling devices that can be combined with the Autolab product range and can be directly controlled by the NOVA software. This allows for an easy integration of Metrohm devices with electrochemical measurements using Autolab instruments (see Figure 1).



Figure 1 – Example of a Metrohm liquid handling setup controlled by NOVA

This application note provides information on the combination of supported Metrohm devices with the NOVA software.

Supported Metrohm devices

NOVA provides direct control, through USB, for the following type of Metrohm devices:

- 814, 815 and 858 Sample Processors
- 846 Dosing Interface

These devices can be connected to the host computer using the provided control cable (Article code: 6.2151.000).

Moreover, additional Metrohm devices can be connected through a dedicated MSB port to these USB controlled devices. The following MSB devices can be used:

- 800 Dosino (1 MSB port required)
- 801 Magnetic stirrer
- 6.2148.010 Remote interface, which provides control of additional Metrohm devices, like the 849 Level Control for bottles or canisters

Metrohm 814, 815 and 858 Sample Processors

The Metrohm 814, 815 and 858 Sample Processors provide three MSB ports on the backplane of the instrument, as shown in Figure 2, which can be used to connect additional Metrohm devices.

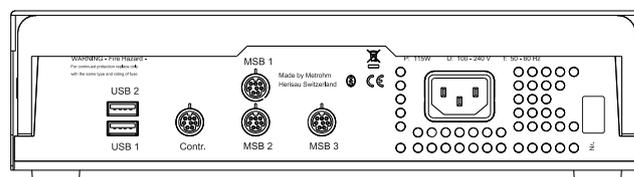


Figure 2 – The MSB ports (MSB 1 – 3) located on the backplane of the Metrohm sample processor

The Metrohm Sample Processors can also accommodate the following additional devices:

- 786 Swing head
- 802 Stirrer
- 823 Membrane pump
- 772 Peristaltic pump
- 843 Pump station (membrane or peristaltic)

Metrohm 846 Dosing Interface

The Metrohm 846 dosing interface provides four MSB ports on the backplane of the instrument, as shown in Figure 3, which can be used to connect additional Metrohm MSB devices.

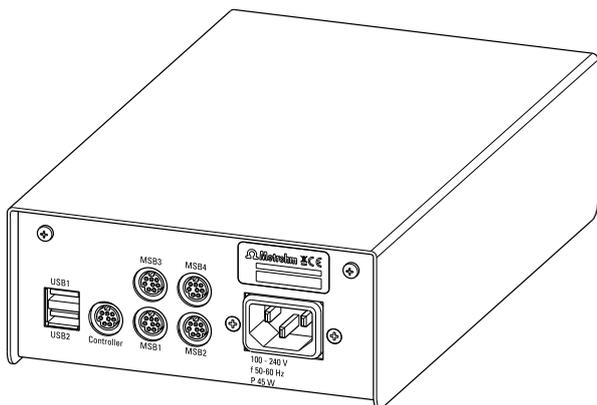


Figure 3 – The MSB ports (MSB 1 – 4) located on the backplane of the Metrohm 846 Dosing Interface

Software control

The settings of all the supported Metrohm devices can be defined and stored in the NOVA software (see Figure 4).

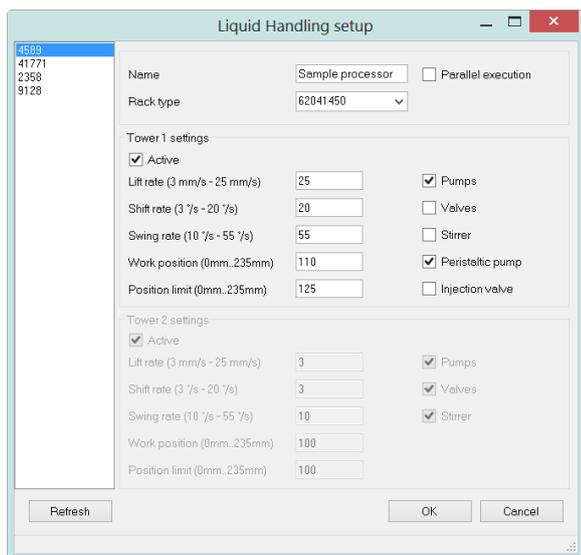


Figure 4 – The settings of the supported Metrohm devices are defined and stored in the NOVA software

Each connected device can be controlled manually, through a dedicated control panel integrated in the Autolab display of the NOVA software (see Figure 5).

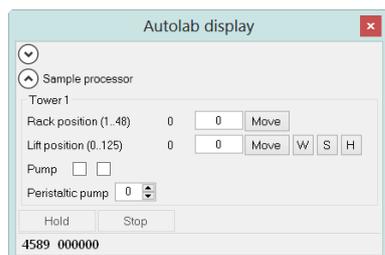


Figure 5 – Manual control panel for a Metrohm Sample Processor

The devices can also be controlled during any NOVA procedure, by adding the provided commands (see Figure 6).

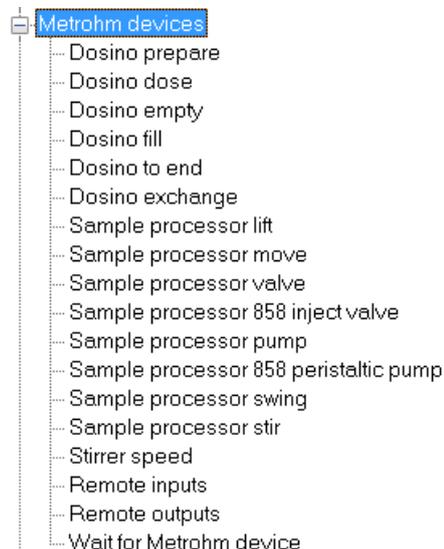


Figure 6 – Metrohm devices are directly controlled by the NOVA software

Conclusion

The combination of the Autolab potentiostat with Metrohm liquid handling systems is straightforward in NOVA. Suitable Metrohm devices can be directly connected to the USB ports of the computer and the commands related to the control of these devices can be embedded into any Autolab measurement procedure.

This convenient combination can be employed to automate sample handling and preparation. Experiment duration can be drastically reduced and user-related sample handling errors can be eliminated.

Find out more

Additional information and specifications of the supported Metrohm devices can be found on the Metrohm website (<http://products.metrohm.com>) and in the External devices tutorial, available on the Metrohm Autolab website: <http://www.metrohm-autolab.com/Products/Nova/Tutorials.html>

Date

25 June 2014