Technical Note

Micro GC Fusion® Auto-Calibration

Overview

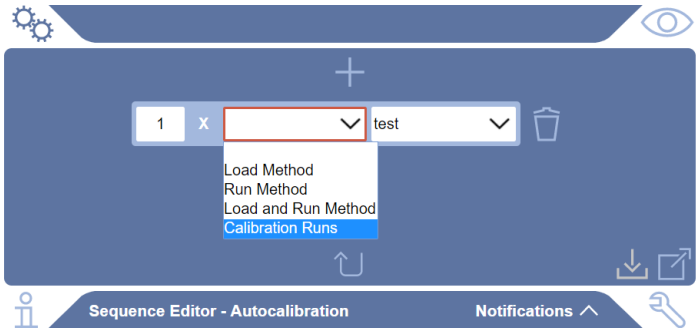
This technical note describes the auto-calibration and average replicates features of the Micro GC Fusion. These features reduce the time it takes to recalibrate a method by incorporating calibration into an automated sequence using the Micro GC Fusion web-based user interface and a connected calibration gas standard. A Valco Stream Selector can be used in conjunction with these features to easily conduct multiple level calibrations.

Introduction

Micro GC Fusion has the ability to automatically recalibrate a previously calibrated method. Depending on the setup of Micro GC Fusion, the auto-calibration can be configured in different ways to accommodate single or multiple levels. Each level corresponds to a different calibration gas standard with varying concentrations of the desired components. When combined with a Valco Stream Selector, single or multiple levels of calibration can be automated without changing gas cylinders. Micro GC Fusion also has the ability to average the results from several runs. This feature is called average replicates and can be combined with auto-calibration.

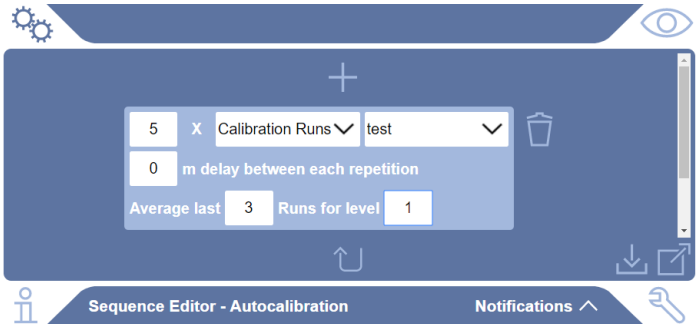
Single Level Calibration

A single level auto-calibration can be achieved through the web-based user interface by creating a new sequence and selecting the run as a **Calibration Run** with a calibration gas standard connected to Micro GC Fusion. Upon completion of the run(s), area counts in the method are updated to reflect the new calibration. An initial calibration must be conducted prior to auto-calibration.



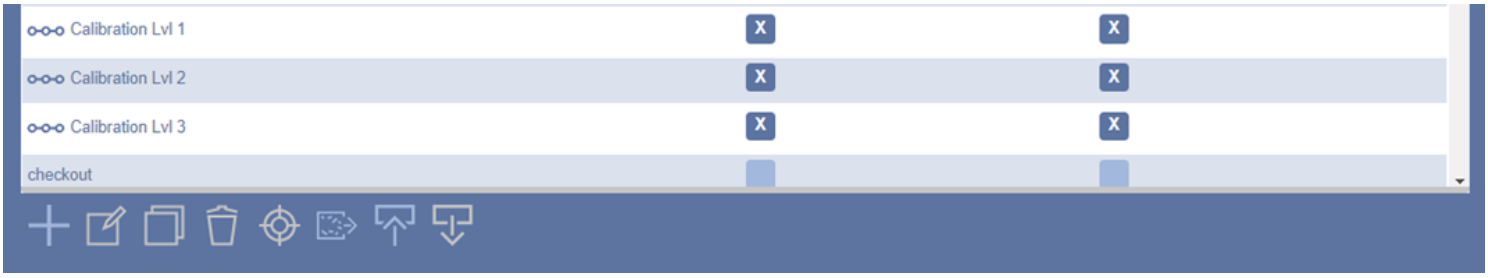
Average Replicates by Using Auto-Calibration

Often, it is desired to average the results of several runs. This can be achieved by manually selecting files in the Micro GC Fusion data browser or by using an auto-calibration sequence. In the **Sequence Editor**, select **Calibration Runs**, enter the desired number of runs to average, and the corresponding level. Within this level, the individual component areas are averaged and the previous calibration is replaced, as long as the new values are within 10% of the previous component area. In the figure below, the last three runs of a five run sequence of the connected calibration gas standard are averaged for level one.



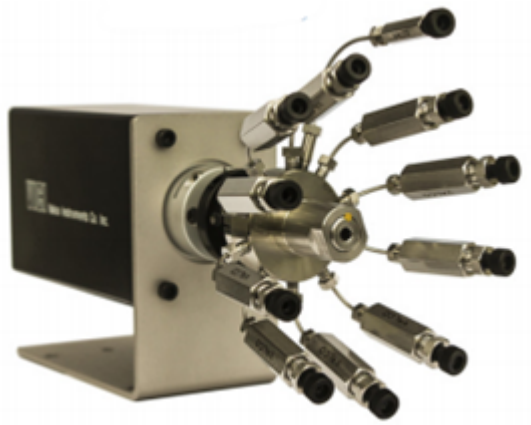
Multiple Level Calibration

Multiple sequences can be created for multiple levels of calibration. Sequences can be scheduled to run back to back at the user's convenience.

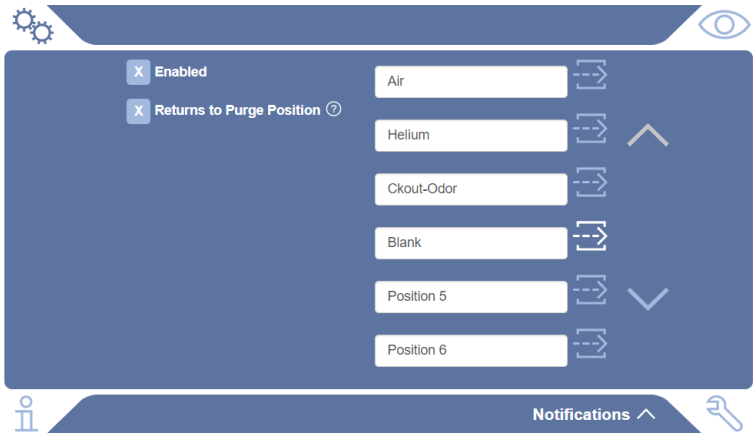


Using a VICI Stream Selector Valve to Conduct Multiple Level Calibration

Switching between multiple calibration gas standards and sample gas streams can be time consuming and labor-intensive. Micro GC Fusion can be paired with a Valco stream selector to automatically switch between calibration gas standards and sample gas streams without changing connections.



Using the Micro GC Fusion web-based interface, each port on the Valco Stream Selector can be configured for calibration gas standards or sample gas streams.



Conclusion

The Micro GC Fusion Gas Analyzer auto-calibration feature provides fast and easy recalibration for single or multiple levels, with the option of averaging replicates from multiple runs. When combined with a Valco Stream Selector, automated sequences can be run to both calibrate the method and run samples without changing gas connections, saving time and increasing sample throughput.

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