INFICON

TECHNICAL NOTE

Automate Sampling by Pairing Micro GC Fusion® with a Valco® Stream Selector

OVERVIEW

This technical note describes the benefit of pairing the *FAST Enabled* Micro GC Fusion Gas Analyzer with a Valco stream selector to facilitate GC analysis with automatic sample switching for multiple gas streams.

INTRODUCTION

Composition monitoring of gas sample streams is often required for single or multiple processes. When comparable results are desired and time between runs is not critical, the monitoring can be accomplished by switching samples into the same GC for analysis.

Switching sample streams manually can be time consuming and labor-intensive. Micro GC Fusion can be paired with a Valco stream selector to solve this problem by automating sample stream switching. The automation improves sample throughput and frees the user to complete other tasks.

MULTIPLE SAMPLE STREAMS

In the example, gas composition from multiple catalyst reactors are monitored by pairing Micro GC Fusion with a Valco stream selector. (See Figure 1.) Samples from the catalyst reactors are switched and injected through a programmed sequence into the GC. To avoid carryover and provide confidence in data accuracy, Micro GC Fusion can be programmed to purge the stream selector internal volume and sample lines, and run a calibration standard analysis to recalibrate the GC.
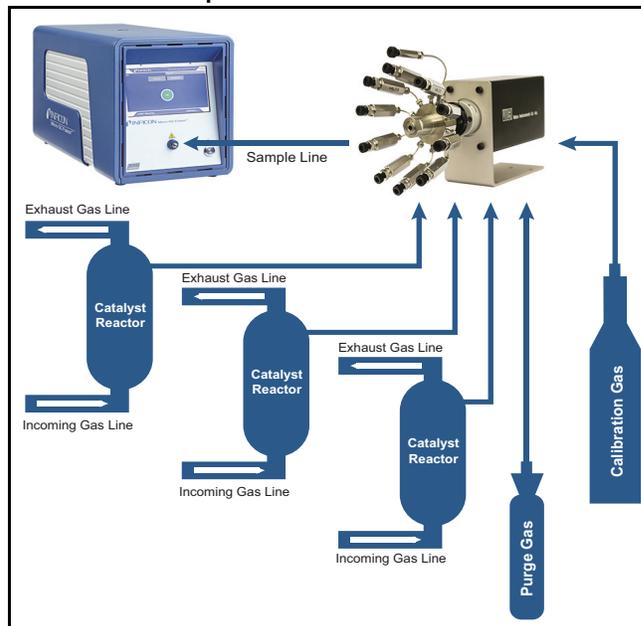
CONFIGURATIONS SUPPORTED

Micro GC Fusion supports multiple Valco stream selector models. (See Table 1.)
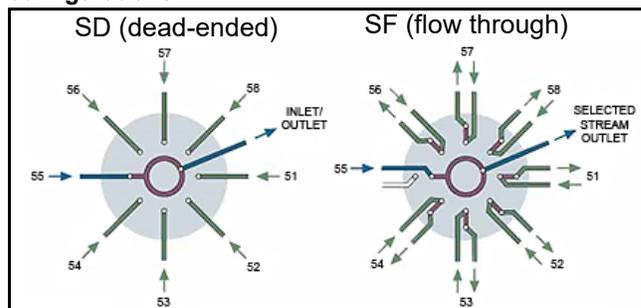
Table 1 Micro GC Fusion supported devices

Valco Stream Selector Models	EUH, EUD, EUT
Flow Path Configurations	SD, SC, SF, ST, and STF
Sample Ports	4 to 16
Control Interface	USB

Figure 1 Multiple catalyst reactor monitoring using Micro GC Fusion paired with a Valco stream selector

Among the selector models, SD and SF selectors suit most application needs. The SD selector is dead-ended, allowing the user to conserve valuable samples; whereas, the SF selector has a flow-through configuration, allowing fresh samples to pass through each valve continuously. (See Figure 2.)

Figure 2 Valco stream selector SD and SF flow configurations

INFICON offers a 10-port SD (dead-ended) and a 10-port SF (flow-through) Valco stream selector accessory package pre-assembled from the factory. The pre-assembled Valco stream selectors have 1/16 in. sample line filters installed and leak checked at each inlet port. (See Figure 3.) Simply connect the sample lines and the Valco stream selector is ready to use.
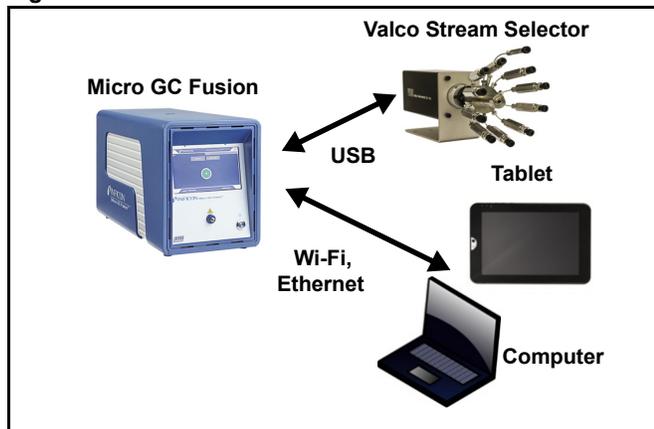
Figure 3 Preassembled Valco stream selector accessory

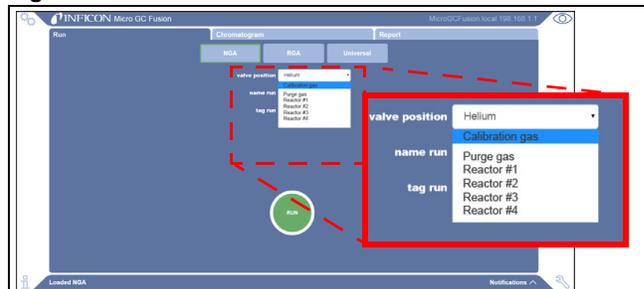**10-Port SD**   **10-Port SF**

CONTROL INTERFACES

Micro GC Fusion automatically recognizes a Valco stream selector once the USB connection is established. Stream selection capabilities will be displayed on the web-based user interface. The Valco stream selector can be controlled through a networked tablet or computer, without additional chromatographic software and device control licenses. (See Figure 4.)

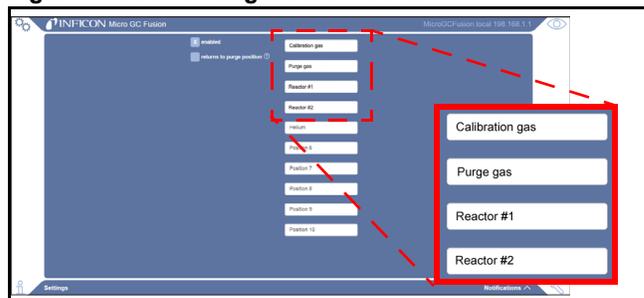**Figure 4 Communication and control connections**

The Micro GC Fusion main screen provides users the ability to manually select a sample port prior to starting a sample run. (See Figure 5.)

Figure 5 Micro GC Fusion main screen

The Valco Configuration screen enables users to name each sample port position on the Valco stream selector. (See Figure 6.)

Figure 6 Valco Configuration screen

The user defined sample port names are selectable on the main screen and the Sequence Editor screen. (See Figure 7.)

Figure 7 Sequence definition with Valco stream selector

CONCLUSION

Pairing Micro GC Fusion Gas Analyzer with a Valco stream selector automates multiple sample stream switching for GC analysis. The sample switching automation eliminates manual valve switching and promotes easy cross-referencing of analysis data from multiple sample streams analyzed on the same GC. With the pre-assembled stream selector accessories and easy-to-use configuration interfaces, Micro GC Fusion paired with the Valco stream selector provides application flexibility with minimal setup time.

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