

# Optimize the Performance of Your Sampling System

We rely on analyzer results to confirm product quality, but when those results are off, the problem often lies in the sampling system. **In fact, around 80% of analyzer issues are caused by poor sampling system design or performance.**

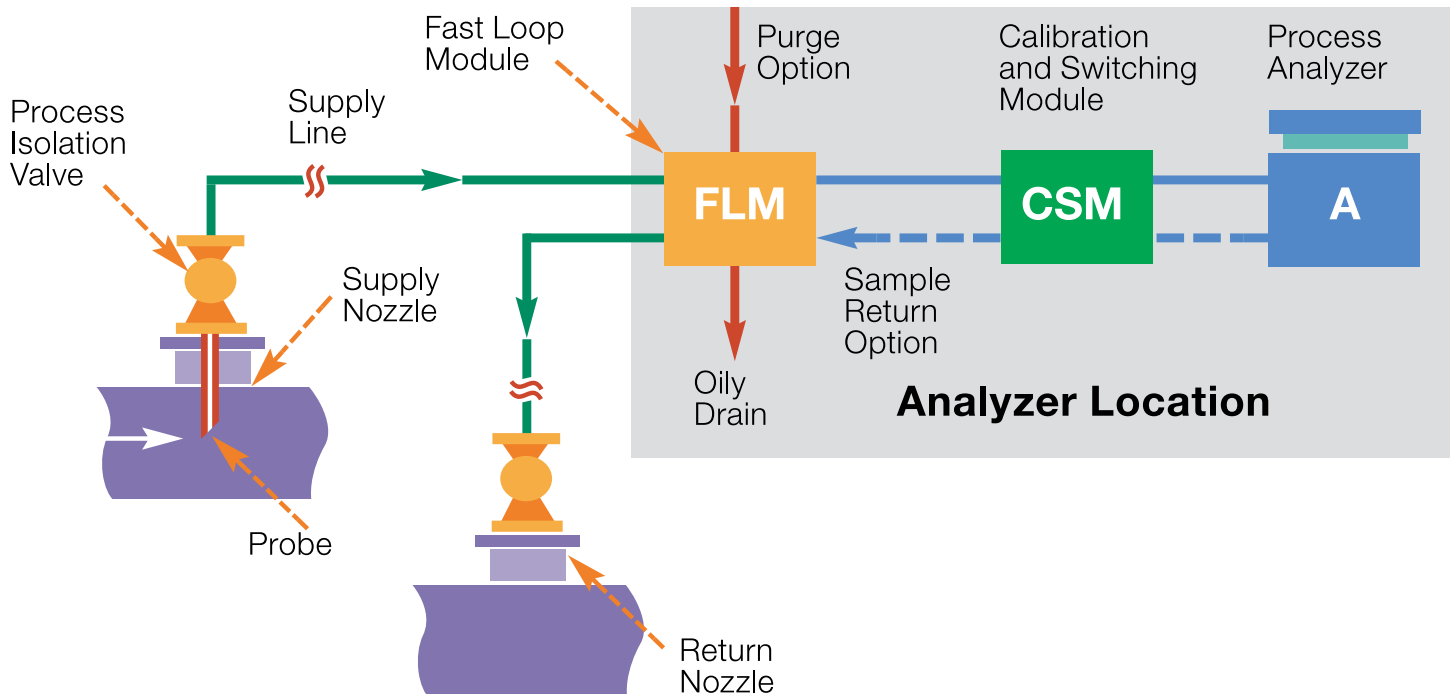
6 main goals of process analysis ensure accurate, efficient, and safe sampling:

- **Compatible:** Ensuring the sample is chemically suited for the analyzer prevents errors and guarantees valid data.
- **Timely:** Fast results allow operators to react effectively.
- **Representative:** The sample must mirror actual process conditions.
- **Reliable:** Consistently available results strengthen decision-making and process control.
- **Cost-Effective:** Efficiency and reduced operating costs.
- **Safe:** Protecting personnel, equipment, and the environment.

Sampling Conditioning System ensures your samples are representative of your process fluids, delivered to the analyzer in a timely manner, and compatible with the analyzer. Additionally, the system offers a bypass option to redirect flow back into the process line, or a venting feature for safe fluid handling.

Designed with a modular approach, it ensures optimal sample conditioning before analysis. We enhance efficiency in analytical instrumentation by helping:

- Eliminate causes of poor sample quality, such as blockage or moisture carryover.
- Reduce required maintenance and analyzer downtime by optimizing system design.
- Resolve issues caused by high particulate loads by implementing filter and separator best practices and calculating sample transport times.
- Reduce time delay by implementing an improved system, with time delay calculations showing expected transit times.



The following are common types of subsystems that can enhance the performance of your sampling systems and how each can work to improve efficiency in your sampling system.

- **Sample Probe**

Using sample probe modules in conjunction with Sample Probe Valves (SPV) can improve safety as well as sample purity and timeliness. A probe provides a faster analyzer response by reducing the volume of the sample system.

- **Fast Loop**

Fast loop modules are designed to handle high flows in sample transport lines to reduce time delays for online analyzer systems. The Fast Loop Module (FLM) can isolate the sample system and introduce a purge gas for system cleaning.

- **Calibration and Switching Module (CSM)**

Swagelok® Calibration and Switching Module, also known as the Sampling Conditioning System, is available in a modular design. The CSM allows the user to select the configuration required for a specific system, and this pre-engineered sub-system gives the user freedom in terms of room since it has a compact footprint and can save about 50% space compared to a conventional Sampling Conditioning System.

The main function of the CSM is to condition and select process streams or to select a calibration stream for analysis. At a minimum, each system must have two inlets: two process stream inlets or one process stream inlet and one calibration stream inlet. The signal opens one of the Stream Selector System (SSV series) double block-and-bleed valve modules corresponding to the stream containing the fluid to be analyzed. The selected fluid flows through the CSM to the process analyzer.

Our certified local experts are ready to assist you in designing and building a customized Sampling Conditioning System tailored to your specific needs and budget. With industry-leading expertise and high-quality components, we ensure precision, reliability, and efficiency in every solution.

**Scan for more information.**



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