

PROCESS SAMPLING SYSTEMS & ONLINE ANALYZERS

**A complete
and integrated
approach to
process control**

**by SRA Instruments
Industrial Division**

Figure 1: An example of a cabinet produced by SRA Instruments containing a process Gas Chromatograph and its online sampling system.



TAILOR-MADE SOLUTIONS FOR REPRESENTATIVE ANALYSIS

At SRA Instruments, we believe that a good analyzer is a necessary but not sufficient condition. To achieve effective and real-time process control, it is essential to correctly extract, treat, and condition the sample.

That is why we offer turnkey packages integrating:

- Custom-designed sampling system,
- Complete sample conditioning,
- Online analyzer (GC, microGC, HPLC, spectroscopic),
- Pre-and post-sales technical support.



Our mission is to ensure reliability, repeatability, and optimal response times, even in complex applications or classified areas.

Technical example

A simple detail that makes the difference between a useless and an effective online analysis system.

The example below shows a common but critical mistake in sampling system design for liquefied streams that need to be vaporized before analysis.

■ Case A - Incorrect design:

No bypass loop is installed before the vaporizer.

Without continuous sample circulation, the sample inside the lines and vaporizer remains stagnant. This leads to **lag times of many hours**, making the analyzer data irrelevant for

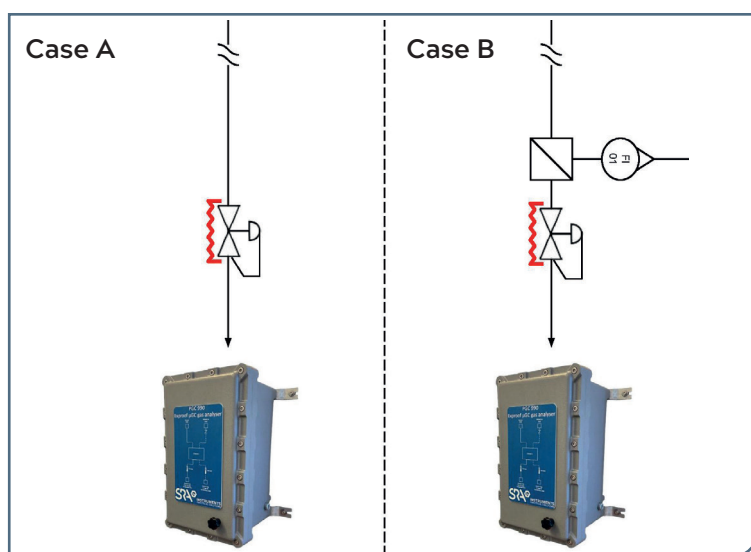
process control.

■ Case B - Correct design:

A properly dimensioned bypass loop is introduced upstream of the vaporizer. This ensures continuous sample flow and rapid refresh, reducing **lag time to a matter of seconds**, and making the analyzer suitable for real-time process monitoring.

This simple design change can transform an analyzer from being **completely useless** for process control into a **critical tool for plant optimization**.

Figure 2: A comparison between poor and good design for the continuous analysis of liquefied sample streams.



The Analysis System

Developing an effective online analysis system means paying attention to every detail:

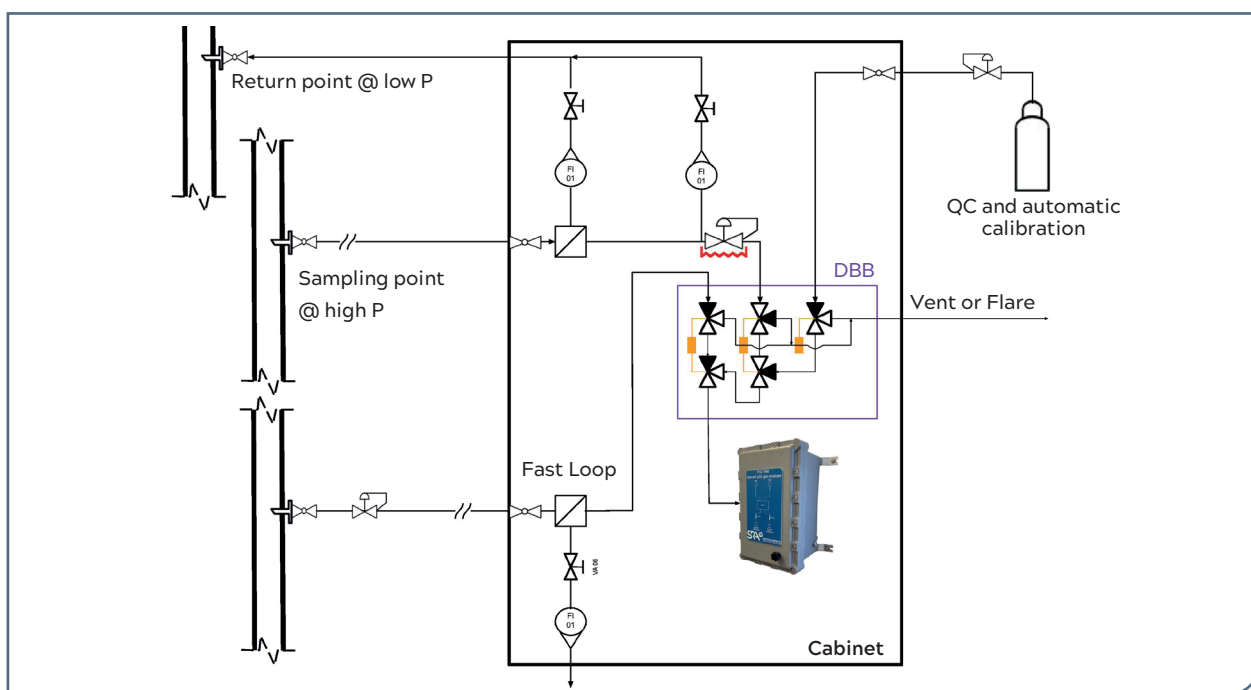
- Selection of the most representative sampling point
- Properly sized nozzles and lines to reduce lag time
- Filtration modules, condensate removal, and pressure regulation
- Fast loop, with vent to atmosphere or reinjection into the process to avoid sample (and cost) waste
- Double block & bleed (DBB) systems for multi-stream selection

- Vaporizers designed and built according to the specific characteristics of the sample

- Analysis of liquids and gases, even at high pressure or temperature.

A mistake in sampling system design can introduce hours of lag time, nullifying the value of any process analytical instrument. We know it – and we prevent it.

Figure 3: Simplified P&ID of a possible cabinet for the online analysis of a multi-stream process.



Our Analytical Instruments

We have decades of experience in process analytical instrumentation. We offer solutions based on:

- MicroGC with TCD technology for fast and compact measurements
- Process GC with TCD, FID, PDD, and MS detectors
- Online HPLC (RID, DAD, MS).

All can be integrated into our SCS modules, in rack, panel, or cabinet configurations.

Installations available for safe area, Zone 2, and Zone 1 ATEX.

Where We Work - Applications

We are ready to take on any challenge in process analytical monitoring. Our solutions are already used in:

- Refining and petrochemicals
- Fine and specialty chemicals
- Natural gas, biogas, and biomethane treatment
- Power-to-Gas and hydrogen monitoring
- Odorants in natural gas according to UNI 7133 standard
- Hydrogen impurity analysis for fuel cells according to ISO 14687.

WHAT WE OFFER:

- Custom design
- Manufacturing and assembly
- FAT, SAT, field commissioning
- Maintenance and after-sales service
- Analytical support pre- and post-sales
- Complete technical documentation (P&ID, datasheets, manuals).

THE ADDED VALUE:

Quality Work and Continuous Support

We do not simply supply instruments – we support the customer throughout the entire lifecycle of the system. We help you make the right, technically sound choices to obtain reliable data and real returns from your investment in process analysis.

Installing an online analyzer means moving from slow, poorly representative batch

analysis to dynamic process control, with results every 5, 10 or 20 minutes depending on your process requirements.

This is the true step change.

- If you truly want to improve the control of your plant, you need to rely on those who know the instrumentation and can design the entire system around the analysis.

Contact us.
We will be your technical partner
– not just a supplier.



*This information is subject to change without notice.

www.srainstruments.com

SRA Instruments SpA: Via alla Castellana 3 - 20063 Cernusco S/N (MI) Italy - Ph. +39 02 9214 3258 - info@srainstruments.com
SRA Instruments SaS: 210 rue des Sources - 69280 Marcy l'étoile France - Ph. +33 4.78.44.29.47 - info@sra-instruments.com