

Hydrogen Quality Monitoring System

Gas Analysis Solution



Hydrogen Quality Monitoring System is specifically engineered to ensure and verify that hydrogen gas meets the quality requirements defined by ISO 14687. This standard specifies the minimum quality of hydrogen fuel for use in a range of applications. For fuel cells used in transport, the standard requires an hydrogen fuel purity of at least 99.97% by mole fraction. Furthermore, it sets extremely low maximum allowable concentration limits for specific contaminants to prevent irreversible poisoning of the fuel cell stacks.

THE SYSTEM

Our system can be customized according to customer requirement and application. It can provide continuous, real-time analysis of the full ISO 14687 parameter panel, including:

- > Hydrogen Purity (H_2)
- > Water (H_2O)
- > Total Hydrocarbons
- > Oxygen (O_2)
- > Carbon Monoxide (CO)
- > Carbon Dioxide (CO_2)
- > Ammonia (NH_3)
- > Total Sulfur Compounds
- > Formaldehyde ($HCHO$)
- > Formic Acid ($HCOOH$)
- > Halogenated Compounds



1. Rendering of the system

MAIN FEATURES

By integrating this advanced monitoring system at your hydrogen production facility, blending station, or refueling station, you can:

- > **Guarantee ISO Compliance:** Generate verifiable, traceable Certificates of Analysis (CoA) to satisfy regulators, fuel cell manufacturers, and customers.
 - > **Protect Downstream Assets:** Proactively prevent fuel cell catalyst poisoning and membrane damage caused by an upset in hydrogen quality.
 - > **Optimize Process Control:** Achieve real-time feedback on production and purification efficiency, reducing waste and minimizing costly batch sampling.
 - > **Enhance Safety and Reliability:** Actively monitor for oxygen ingress and ensure a consistent, safe fuel supply for end-users.
- This system is an indispensable solutions for guaranteeing the fuel quality essential to the sustainable operation of the hydrogen economy.



2. Hydrogen car with refueling station

THE SOFTWARE

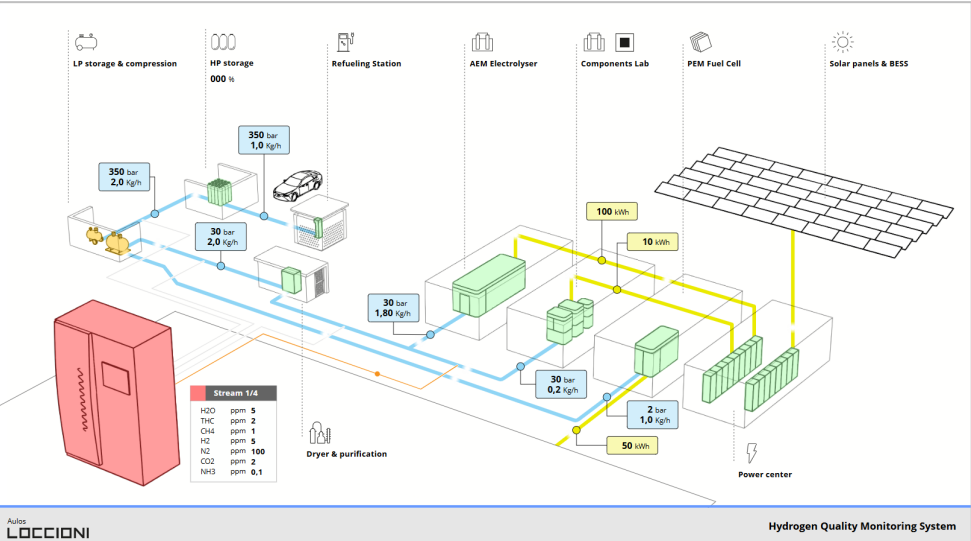
The software is based on Loccioni's Aulos platform and suite that comprises two main systems: **Aulos Automation**, which is a monitoring desktop application that includes the HMI for controlling the hardware and executing routines, and **Aulos Supervisor**, which is the application that collects data and results from the systems and creates programs and configurations for them.

The application features are:

- > User Access Configuration
- > Hardware Monitoring and Calibration
- > Manual debug
- > Dashboard
- > Program Editor
- > Program Execution
- > Automatic Cycling
- > Result Analysis
- > Health Analysis
- > Data Maintenance Tool



4. Analysis Cabinet



5. Synoptic

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