

ProLine-FC™ Process Mass Spectrometer

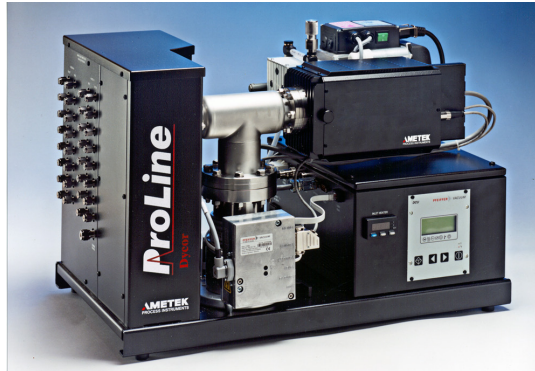
Online Gas Analysis for the Fuel Cell Industry

Applications

- || Catalyst efficiency, performance, and punch-through
- || Reformer studies
- || Detect abnormal conditions
- || Oxidants and fuel analysis
- || Comparative studies of catalyst performance
- || Stack efficiency
- || Hydrogen-cooled turbine generators

Quantitative Analysis in a Compact Package

As fuel cell technology continues to develop at an accelerating pace, the need for online process gas analysis has never been greater. Whether for R&D, pilot plant, or production control, continuous and quantitative measurement of the gas composition in critical areas of the process provides the vital information needed to maintain optimum performance, evaluate materials, or troubleshoot abnormal conditions. AMETEK's ProLine process mass spectrometer offers real-time online gas analysis in an affordable, easy-to-use package.



Though fully capable of automatic continuous online monitoring for process control, the ProLine is equally valuable as a diagnostic tool for evaluation of process upsets or for research into the effects of different materials or catalysts. A further benefit of the process mass spectrometer is its ability to scan for contaminants or unexpected components. In addition, the low price and versatility of the ProLine offer the least cost-per-sample-point and an attractive return-on-investment.

Multicomponent, Multistream

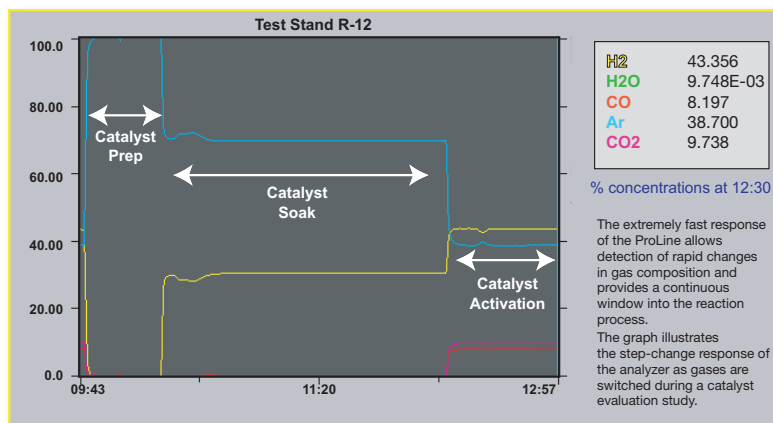
Real-time process monitoring of up to 32 components is straightforward with ProLine's powerful, easy-to-use software. Complex overlapping spectra are handled automatically and ProLine provides data output directly in concentration units for fuel cell gases including O₂, CO, CO₂, H₂, N₂, Ar, methane, ethane, propane, butane, and pentane as well as contaminant gases. The multiport sample inlet system consists of 8 or 16 manifold-mounted valves and a capillary restriction in an enclosure heated to prevent condensation. Analysis of multiple components and the ability to sample up to 16 streams, allows one ProLine to monitor and control several processes at the same time including reformers, fuel cell stacks, and catalyst test stands.

Easy to Use and Maintain

At the heart of the ProLine mass spectrometer is the proven AMETEK quadrupole mass filter. The excellent stability, sensitivity and resolution across the whole mass range, even at hydrogen mass 2, is particularly valuable for fuel cell studies. The software provides easy set-up and operation and includes advanced alarm and automation capabilities. Autocalibration maintains the performance and accuracy of the system for quantitative analysis. Self-diagnostics and modular design ensure ease of maintenance by your own personnel on site, with modem support available for additional factory diagnosis and troubleshooting.

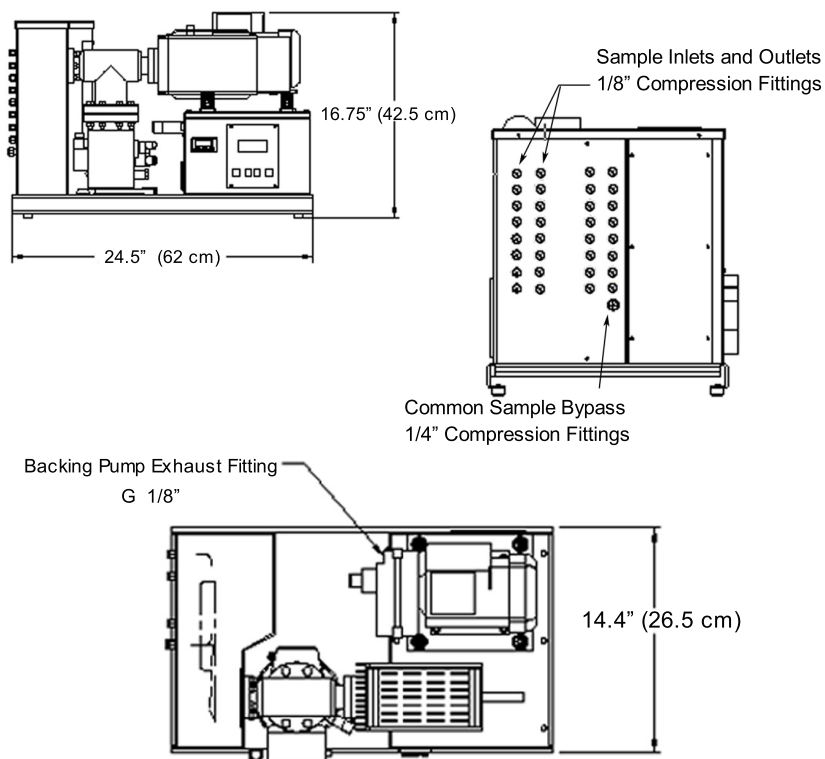
Why AMETEK?

AMETEK has more than 20 years of experience in mass spectrometer design and manufacture, with many thousands of analyzers already operating reliably. The field-proven analyzer components, combined with AMETEK's more than 30 years' experience in the process analyzer business, means you can depend on ProLine to take care of your critical process analysis and control needs.



Real-Time Analysis

ProLine-FC Process Mass Spectrometer



Specifications

Range: 1-100 AMU

Sample Ports: 8- or 16-way stream selection manifold

Inlet Pressure: 2 to 20 PSIG (14 to 140 kPa); optional sub-atmospheric pressure

Accuracy: Better than 0.5% of measured value for argon in air

Outputs: RS-485, RS-232, optional 4-20mA

Detection Range: From 1 PPM to 100%

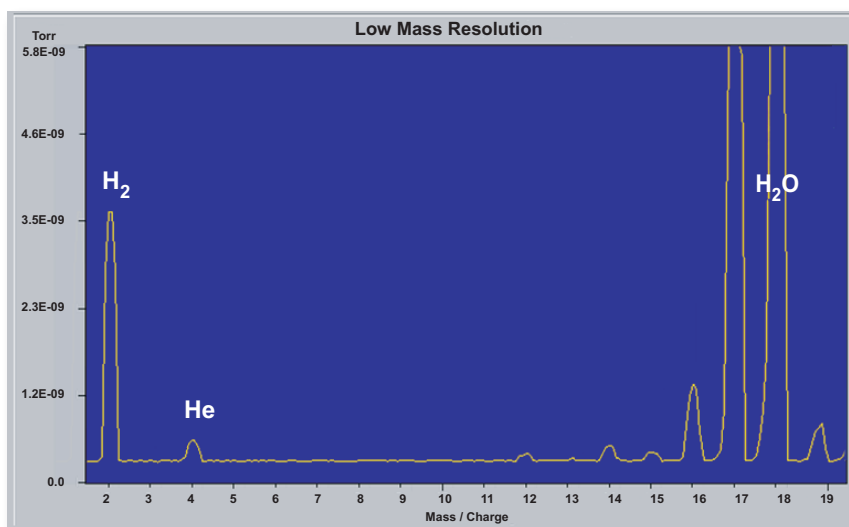
Power: 115/230 VAC, 50/60 Hz, 500W

PC Requirements: Windows 98 through Windows 8

Enclosure: General purpose benchtop

Dimensions: 14 3/8" x 24" x 15 1/2" (36.5 cm. x 61 cm. x 39.37 cm.)

Weight: 80 lb. (36 kg.)



The excellent resolution of the ProLine is shown by the clear separation between all of the mass peaks including H₂

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PROCESS INSTRUMENTS

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F-0366 Rev 3 (1114)

One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
Specifications subject to change without notice.

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