

Process Mass Spectrometer *IMSQ4-GP General Purpose*



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Process Mass Spectrometer IMSQ4-GP

- **>98% Uptime**
- **Easy Maintenance**
- **Small Footprint**

*It seemed like a simple idea to us. If we build what our customers need at a price that makes sense, why would they go anywhere else? That idea has made ABB the leading supplier of on-line process mass spectrometers in the world. With the IMSQ4-1, which was designed for continuous analysis in hazardous locations, we provided a “true process analyzer.” We are still listening and so the IMSQ4-GP joins the ABB family of process mass spectrometers. The IMSQ4-GP, (General Purpose) is designed for on-line analysis like **fermentation offgas, laboratory scale processes, and steel top gas applications**, where reliability and analytical capability is demanded without the need to operate in hazardous areas. To design the IMSQ4-GP, we put to use the tactics that worked for IMSQ4-1. We spoke to customers and integrated their ideas into our designs. We showed them our plans before we built a single prototype so that the results would fit their needs. Add to that our commitment to continue to listen and learn from you, the customer, as well as the unparalleled support of the ABB Customer Service, and we think you will be impressed with the results.*



Reliability & Maintainability

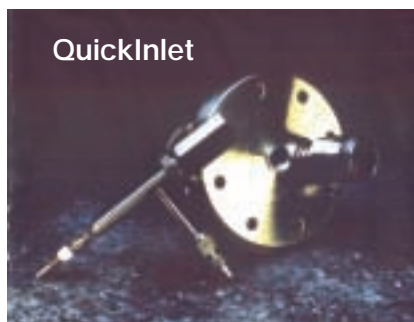
The chief requirement for an on-line analyzer is that it remains on-line, and the ABB family of mass spectrometers has a proven record of reliability. Surveys of customers indicate that normal instrument **uptime is >98%** ensuring that the benefits of fast on-line analysis are realized. When the system does need maintenance it has been designed to allow **easy access** to component parts. The IMSQ4-GP allows access from all four sides plus the top for maintenance, with the most frequent access through the front. The system package has the **small footprint** required to minimize lab space.

Continuous diagnostics are run via the SMARTware software alerting the user to problems and pointing to the source so that downtime can be minimized. **Two filaments** are used with one acting as a spare, and when one fails the software **automatically switches**. The software can be configured to run a new calibration prior to returning to normal operation.

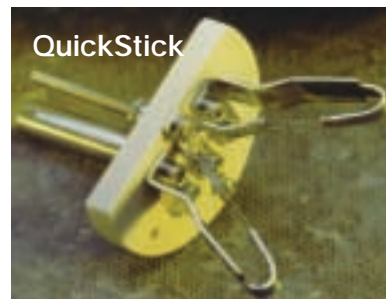
Quick Features

QuickStick and **QuickInlet** are two particularly useful innovations found in Questor. QuickStick allows for filament replacement in minutes instead of hours, like other instruments.

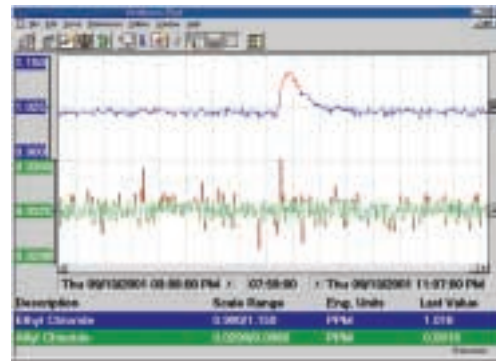
QuickStick can be changed easily without requiring disassembly. The QuickInlet is designed to protect the mass spectrometer from any sample contamination. Even in the best case there are times when liquids or solids get through the sample system to the inlet. The QuickInlet prevents any damage to the analyzer. The QuickInlet can often be cleared of obstructions caused by liquids or solids without breaking vacuum. If an inlet change is required, **the QuickInlet can be changed in 10 minutes.**



- **Protects analyzer**
- **Easy changeout**



- **Automatic switching**
- **Replaced in minutes**



Flexibility

The QMSQ4-GP utilizes the world's most advanced process Mass Spectrometer software package, **SMARTware**. Operating under Microsoft Windows™ SMARTware provides easy access to the Questor GP's features.

SMARTmethod allows the operator to type in his sample composition, and IMSQ4-GP automatically creates the analytical method. IMSQ4-GP can analyze up to 40 components per sample point fully configurable in software.

Comp	% Comp	Std. Dev	% RSD	Interval
H2	77.8773	0.0008	0.0048	113.3071
O2	20.9906	0.0007	0.0178	20.3178
Ar	0.9980	0.0002	0.0202	2.1533
CO2	0.1012	0.0001	0.0912	0.0995
Average Input#1		Minimum Pressure (Bar)		Maximum Current
	20.1172	1.0e-6		0.0000

SMARTsequence allows the operator to build a complete set of analyzer activities including stream selection, analysis, survey scan, calibration, or tune functions. Each of these functions can be initiated

on a sequenced, timed, or alarmed basis.

Survey Scan allows the user to look for unknowns by doing a complete scan on any part of the system's mass range, **up to 250 amu**. Other SMART features allow the user to tune, view immediate and historical data, and evaluate instrument performance.

Commercial Applications

IMSQ4 has an established track record in a variety of on-line applications including:

- **Metals Production**
- **Fermentation**
- **Pilot Plant Monitoring & Control**
- **Ambient Air Analysis**
- **High Purity Analysis**
- **Semiconductor Manufacture & Research**
- **Emissions Monitoring & Others**

When you need fast gas analysis from percent (%) levels to **parts per billion (ppb)**, in a nonhazardous environment, IMSQ4-GP is your solution.

Connections

No analyzer is complete without the pieces that connect it to the world. The IMSQ4-GP provides the most complete options for sample selection and communication. Sample selection systems are available from single point to fully customer controlled multi-port sample arrangements. Both high throughput and minimum dead volume rotary valve options are available as well as sample selection manifolds utilizing solenoid valves. Analog communications are available with **0-10 Volt** or **4-20 mA** outputs. Several serial protocols are available including industry standard **Modbus** protocol.

Support

Another critical requirement for an on-line analyzer is the ability to recover quickly should it go off-line.

Should you ever have problems with your analyzer, you need to know that you have the **largest and best** Mass Spectrometer support organization in the world behind you. Our market leadership is built on its superior customer service.

ABB has worldwide support spread around the globe. No other Process Mass Spectrometer company can offer the crucial level of parts and people support needed to get you on-line.

In fact, with our **SMARTlink** capability our service people can dial in and help to solve your problems with minimum time and expense.



Specifications subject to change without notice.

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