



# Q-7000 MS

## Fast Raw Emission Analyzer



**HIGH SPEED, DIRECT EMISSION  
GAS ANALYZER  
FOR H2, O2, CO2, H2O, N2 and  
more...**

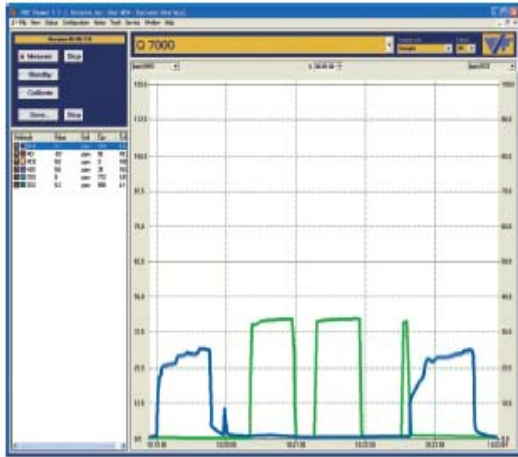
Higher demands for cost reduction, enhanced process control efficiency, coupled with increased environmental awareness is pushing the development of faster and more sensitive next generation quality control analyzers. With years of advanced technical development and process monitoring experience these demands are constantly met and exceeded by V&F's line of process mass spectrometers.

The series Q7000-MS has been introduced to the fuel cell industry to fulfill the demand for highly dynamic, high speed direct emission measuring technique.

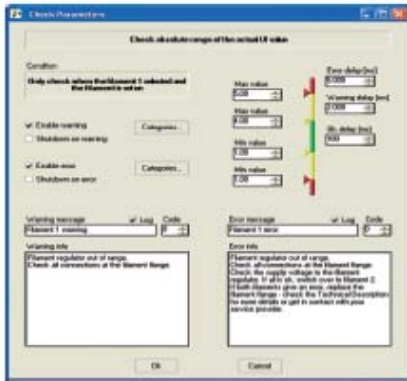
Combining well proven technologies along with V&F's patented sampling and control system and 20 years of experience has produced an instrument capable of analyzing low to high percent levels of H<sub>2</sub>, O<sub>2</sub>, CO<sub>2</sub>, H<sub>2</sub>O and many others direct from the fuel cells critical emission points. Ultra high speed analysis, rugged direct sampling, and high dynamic range make the Q7000 an extremely powerful R&D tool for the industry.

### Technical Data

<b>Mass Analyzer Range</b>	<b>1-200 amu</b>	<b>Ambient Temperature</b>	<b>10 to 50°C</b>
<b>Mass Resolution</b>	<b>1 amu</b>	<b>Heating Temp.</b>	<b>80 – 190°C</b>
<b>Analysis Speed</b>	<b>10 – 10.000 msec/amu</b>	<b>Humidity</b>	<b>&lt;90% at +45°C</b>
<b>Analysis Range`</b>	<b>% levels</b>	<b>Sample Volume</b>	<b>30 to 250 ml/min</b>
<b>Response Time</b>	<b>T90 &lt;100msec</b>	<b>Power Requirements</b>	<b>110V/60Hz</b>
<b>Dimensions (mm)</b>	<b>550 x 650 X 700</b>		
<b>Concentration Drift</b>	<b>&lt; 3 % over 12 h at 1% H2)</b>	<b>Data Interface:</b>	<b>Analog IN/OUT AK Protocol, RS232 TCP/IP</b>



Operator Interface mit 4-Knopfbedienung



Parameter Check mit Ampelfunktion

- Multi-component analysis to 100% levels
- Excellent response (100 msec per compound) and reproducibility
- Simple to use, yet extremely flexible and intuitive software for extensive analysis procedures
- Heated, fast flow capillary sample inlet for direct sampling void of condensation or particulate interferences for long term operation
- Sophisticated sample pressure regulation to accommodate all sample port pressure fluctuations
- Independent of sample gas matrix
- Multiple component analysis for cost effectiveness
- No carrier gas or dilution required
- Rugged and mobile system for ease of transport between test cells
- Low annual operating costs

## Principle of Operation:

The Q7000 is a traditional quadrupole MS with electron collision ionization (EI-MS). The ionization level is to 70 eV. The mass range is 1 – 200 amu with a mass resolution of 1 amu.

- Speed of analysis is 10 msec per component
- Automatic pressure control for pressure fluctuations from 0.5 to 5 bar.
- Selectivity, ease of operation, ruggedized systems

**V&F has been providing quality high-speed analytical equipment and accessories to industry and research for over 15 years.**

**Our innovative real time mass spectrometers are configured to client specifications to provide optimal and timely emission or process information for most any industrial or research application.**

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