

Hidden Q/C Series Gas Analysers

Real-time gas analysis systems



vacuum analysis

surface science

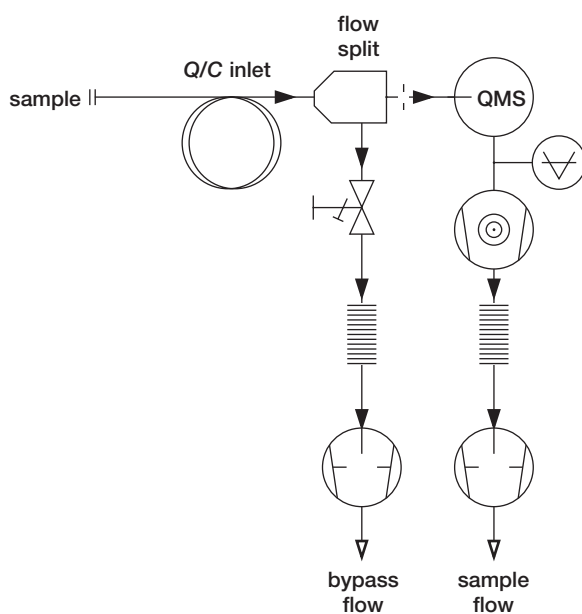
plasma diagnostics

gas analysis

Q/C Series Overview

The Hiden Q/C Series comprises a range of compact, state-of-art, real-time gas analysers. At the heart of each is one of Hiden's industry leading quadrupole mass spectrometers, providing unrivalled precision, stability and sensitivity.

Gases and vapours are sampled continuously from atmospheric or near-atmospheric pressure via a flexible, heated Quartz Inert Capillary (Q/C) inlet.



The Q/C inlet responds to changes in gas composition in less than 300 milliseconds and multiple gases can be measured simultaneously as a function of time and/or temperature. Gas concentrations may be tracked over a wide dynamic range (percent to ppb levels) at sampling rates of more than 50 data points per second.

The entire gas analysis package operates under the control of Hiden's versatile MASsoft software providing extensive data handling, review and export facilities that are compatible with Windows™ operating systems.

QIC technology...at a glance



QIC-20

The QIC-20 is the entry-level system and is suitable for most general purpose laboratory applications, for example gas purity or headspace analysis.

A 72 species spectral library is standard and includes cracking patterns with overlap alarms and auto-suggest for alternative peaks.

Soft ionisation mode, sometimes called appearance potential MS, allows the instrument to operate at or near ionisation thresholds, greatly assisting in the simplification of complex mixture analysis.



HPR-20 QIC

The HPR-20 QIC extends the capabilities of the entry level system with an advanced differential pumping arrangement for processes that contain more than a few percent of helium or hydrogen.

Users can interchange capillaries between low, medium and high flow versions for maximum sensitivity to a given process.

A wide range of interfaces have been designed in collaboration with leading thermal analysis equipment manufacturers and are available off the shelf as standard accessories making this system ideally suited for evolved gas analysis (EGA).

Two user configurable 0-10 V analogue inputs are available for external signals, temperature or pressure for example. The onboard I/O subsystem enables synchronisation of data acquisition with external events, such as the temperature ramp start signal from a TGA.



HPR-20 QICplus

The HPR-20 QICplus is a fully automated, quantitative on-line gas analysis system.

In addition to all of the performance benefits of the HPR-20 QIC, the HPR-20 QICplus is interfaced with a four stream calibration module operating under the control of the Hiden Quantal calibration software.

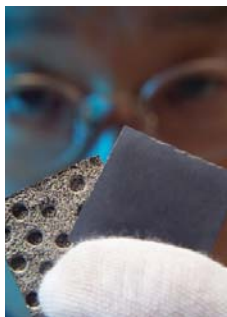
It is ideal for applications demanding the highest accuracy and where significant spectral overlap occurs. Quantal calibration software includes calibration, check gas and background gas recipe selection.



Q/C technical specifications

Features

- Multiple configurations for ultimate flexibility
- Continuous monitoring over the range 100 mbar – 2 atmospheres
- Compact, state-of-art quadrupole mass spectrometer detector
- Fast response inert capillary inlet
- Powerful, intuitive software
- Extensive I/O facilities for process control
- Standard EGA interfaces to popular thermal analysis equipment



TuffCell - FuelCell*

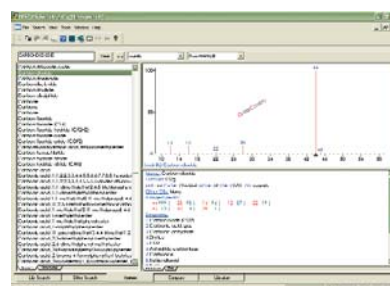
Applications

- Fuel cell development
- Catalysis studies
- On-line analysis of trace components in process gases
- Environmental monitoring
- Combustion studies
- Off-gas/Headspace analysis
- Membrane studies
- Thermal Analysis – TGA/DTA

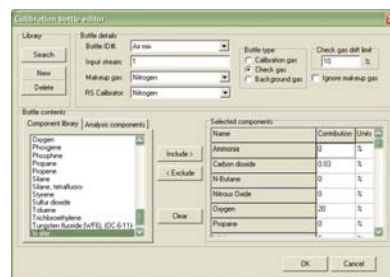
Q/C Series Specifications

sample pressure	100 mbar to 2 bar (options to 30 bar)
sensitivity	100 ppb with standard single filter quadrupole 5 ppb with optional triple filter quadrupole
mass range	200 amu (300, 500, 1000 amu options)
detector	dual Faraday/Electron Multiplier
ion source	direct inlet twin filament electron impact ion source
soft ionisation	0-150 eV in 0.1eV increments
inlet type	2 metre, heated quartz inert capillary
capillary temperature	up to 200°C
gas consumption rate	20 ml/min with options down to 1 ml/min
response	<300 msec
acquisition rate	50 mass channels/sec
library	72 species library with cracking patterns
external inputs	x2 (0-10 V) user configurable
acquisition control	extensive range of analogue (e.g. start/stop/pause) and digital I/O
operating system	Windows™ NT/98/2000/XP
communications	RS232/Ethernet

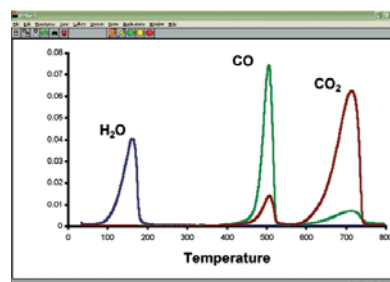
MASsoft Software



Integration with NIST



Quantal Calibration Application



Multiple Species Trend Plotting

Application Focussed Options

Multistream valves
20, 40 and 80 way versions



Molecular Beam Inlet System
with aligned skimmer inlets



Membrane inlets



Catlab catalyst microreactor



Furnace modules and furnace
interface assemblies



8-stream heated valve inlet



Q/C

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It is Hiden Analytical's policy to continually improve product performance and therefore specifications are subject to change.

TECHNICAL DATA SHEET 153