

MGT 100/300

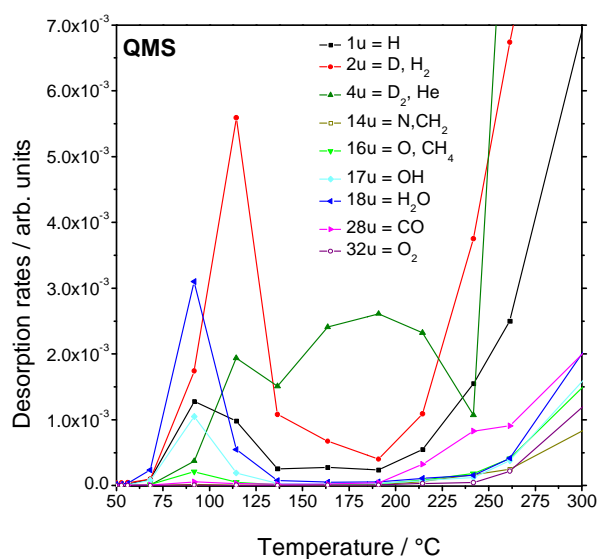
Multi Gas Analyzer with Thermal Desorption

Basics

The analysis of gases being emitted from heated samples by desorption or decomposition is of great technical interest, for example in quality control of industrial processes, in materials analysis or in research. Frequently, Thermogravimetical Analysis (TGA) is applied. Hereby the mass change as a function of temperature and time is measured. To avoid oxidation processes closed housings are required which are flushed by inert gases like N₂ or Ar. To gain more information beside the mass changes, TGAs are quite often combined with mass spectrometers or Fourier Infrared Transform Spectrometry (FTIR).

The use of a discrete stand-alone device with thermal desorption like MFMs MGT combines TGA and mass spectrometry. Emitted gases are analyzed high efficiently and quantitatively. The modern in-line analysis software calculates mass losses in combination with the chemical species very precisely.

The measurements are performed completely automatically. After positioning of the sample the system pumps down until the required testport pressure is reached. The user only has to choose the gas species to be investigated, minimal and maximal temperature as well as the temperature ramp. The maximal temperature is 1.800 °C, the maximal temperature ramp ist 50 K/sec. After the measurement the device stands by in a condition chosen by the user. All data may be stored easily and can be loaded for review. The MGT is completely network able and data may be stored in a central server.



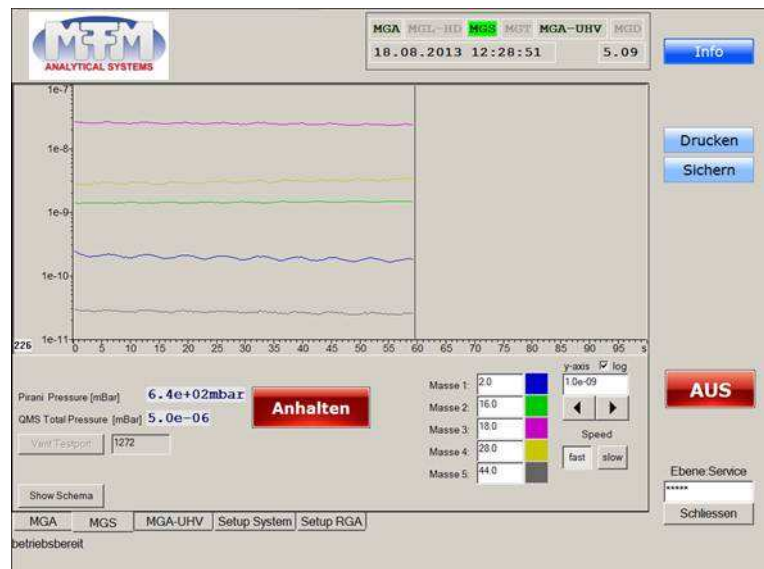
Quadrupole Mass spectrometer

- highly integrated Quadrupole Mass Spectrometer
- very high resolution
- measuring all masses from 1 to 300 amu
- high mass selectivity
- partial pressure down to 5×10^{-14} mbar
- automatic measuring pressure optimization
- pressure ranges between 10^{-3} mbar and 1000 mbar (10^{-8} mbar in UHV version)
- fully automatically measurements
- oilfree vacuum via high performance scroll pump

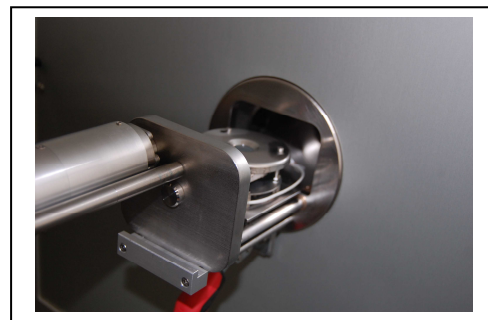
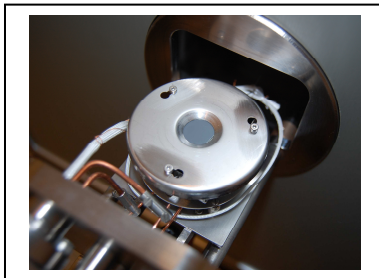
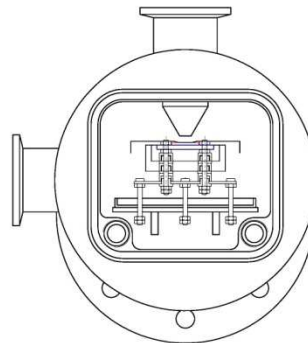
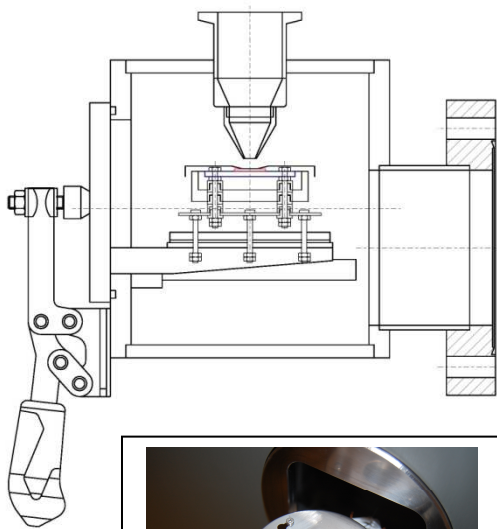
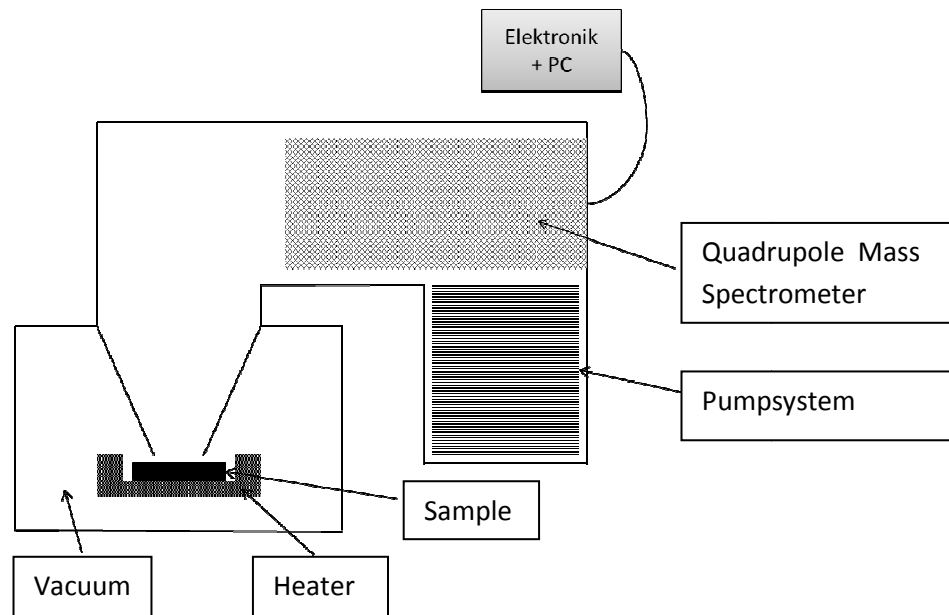


Handling

- modern and easy to handle touchscreen
- simply choose of mass range
- measured spectra may be printed or saved
- running integration on the users demand
- software updates may be done per button click (per Ethernet or USB)



Schema



**Load Lock with heater station
differential pumped**

Technical Data

Dimensions	650 × 600 × 430 mm ³
Testport	0,5 l Load Lock
User Interface	Grafischer Touchscreen
Operating Temperature	10°C to 35°C
Digital und analog interfaces	Ethernet, USB, analog I/O ports
Weight	55 kg
Startup time	quick measurement: 10 min Standard measurement: 60 min
Power supply	90-240 V, 50-60 Hz, 500W max.
Rough pump	Two stage rotary pump
Spectrometer pump	Turbo Molecular Pump
Testport pump	Molecular dragpumpe
Pumping speed at testport	10 l/s
Minimal detectable partial pressures	10 ⁻¹⁰ mbar
Detectable gases	All gases with masses between 1 and 100 resp. 300 (MGA100resp. MGA300), for example O ₂ , CO ₂ , Ne, Ar, hydrocarbons
Detectable species	Ions, neutrals and radicals
Ysensitivity	> 1,5×10 ⁻⁴ A/mbar
Abundance Sensitivity	10 ⁵
Resolution	1 amu with 10% valley resolution over the full mass range
Detection	Faradaycup or multiplier, automatically chosen by the system
Mass tracking	Simultaneous measurement and display up to 5 masses
Temperature range	from room temperature up to 1800 °C
Temperature ramp	up to 50 K/sec