



HPA 220

Modular and flexible solutions for qualitative and quantitative gas analysis

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High Pressure Analyzer HPA 220

With the HPA 220 high pressure analyzer, we offer a flexible, modular vacuum solution that is ideal not just for analyzing gases but also for monitoring and controlling processes.

The perfectly matched combination of a mass spectrometer system and a dry HiPace turbopumping station is supplied with three different gas inlet options. This allows you to work in a pressure range of up to 50 hPa. The choice is yours! Whether you are looking for a manual or electropneumatic gas inlet, with the HPA 220 you always have the perfect solution for your application.

Software support

The HPA 220 is supplied with Quadera® software which can be operated intuitively. A software add-in for easy valve control is available for control units with electropneumatically operated gas inlets. In addition Pfeiffer Vacuum provides customer-specific software solutions.

Advantages at a glance:

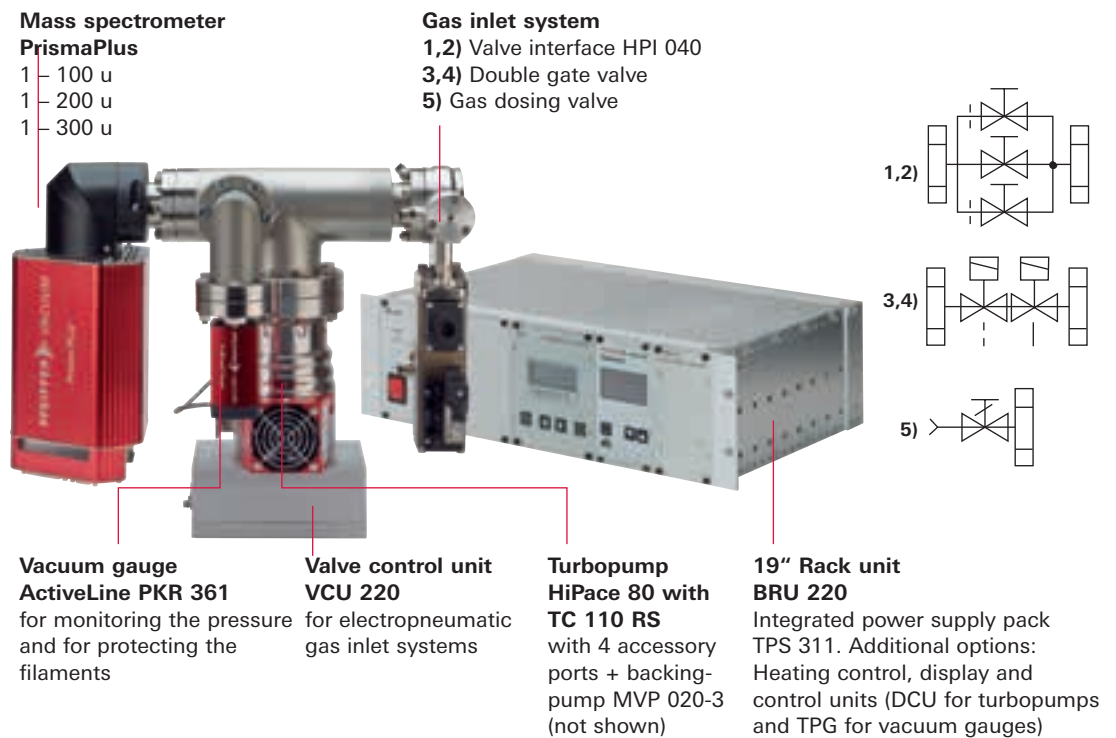
- Provides great flexibility thanks to its 5 manually or electropneumatically operated gas inlet options for analyzing, monitoring and controlling processes up to a pressure of 50 hPa.
- Easy and flexible system integration through a variety of digital and analog inputs and outputs.
- Multiplex operation allows data evaluation of several mass spectrometer systems with a single PC.
- Compact dimensions for flexible integration.



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Gas analysis in the pressure range of up to 50 hPa

HPA 220 system overview:



1,2) Valve interface HPI 040

Manually or electropneumatically operated. Consists of three valves, a bellows-sealed gate valve with a nominal diameter of DN 40 CF for residual gas analysis or leak detection up to $< 5 \cdot 10^{-7}$ hPa and two valves with exchangeable orifices in the bypass. One 0.03 mm orifice for extending the range to 8 hPa (N_2) is enclosed.

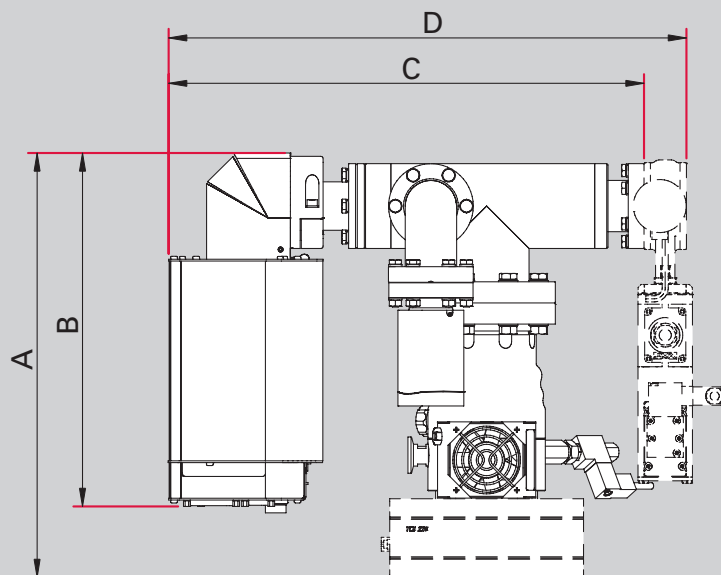
3,4) Double gate valve

Manually or electropneumatically operated. Consists of two bellows-sealed gate valves which are welded together. One gate with a nominal diameter of DN 40 CF for residual gas analysis or leak detection up to $< 1 \cdot 10^{-4}$ hPa and a second gate with an exchangeable orifice. Delivered ready fitted with a 0.1 mm orifice for the pressure range 0.05 to 0.5 hPa (N_2).

5) Gas dosing valve

Manually adjustable gas dosing valve for pressure range from $1 \cdot 10^{-3}$ up to 50 hPa. The maximum possible and reasonable pressure range is determined particularly by the increasing gas segregation which occurs at progressively high pressures.

HPA 220 dimensions



Version	A	B	C	D
HPI 040 H	–	290	390	427
HPI 040 P	350	290	390	427
Double gate valve, manual	–	290	390	457
Doppelzugschieber, pneumatisch	350	290	390	457
UDV 040	–	290	390	491

Dimensions in mm

HPA 220 order matrix

Order number

PT M 5 a b c d

Mass range

1 – 100 u	1
1 – 200 u	2
1 – 300 u	3

Ion source and filament

Open ion source, filament: yttriated iridium	1
Open ion source, filament: tungsten	2

Gas inlet system

HPI 040 H, bellows-sealed gate valve, DN 40 CF, manually operated, two bypass valves with 0.1 mm and 0.3 mm orifices, 0.03 mm third orifice enclosed	1
HPI 040 P, bellows-sealed gate valve, DN 40 CF, electropneumatically operated, two bypass valves with 0.1 mm and 0.3 mm orifices, 0.03 mm third orifice enclosed	2
Double gate valve, DN 40 CF, manually operated, one gate opens to release full cross-section, one gate with 0.1 mm orifice	3
Double gate valve, DN 40 CF, electropneumatically operated, one gate opens to release full cross-section, one gate with 0.1 mm orifice	4
UDV 040, gas dosing valve, manually operated, VCR 1/4"	5

Cable length and accessory option

3 m, without option	0
3 m, with TPG display and control unit	1
3 m, with DCU display and control unit	2
3 m, with TPG and DCU display and control units	3
10 m, without option	4
10 m, with TPG display and control unit	5
10 m, with DCU display and control unit	6
10 m, with TPG and DCU display and control units	7

HPA 220

Software support

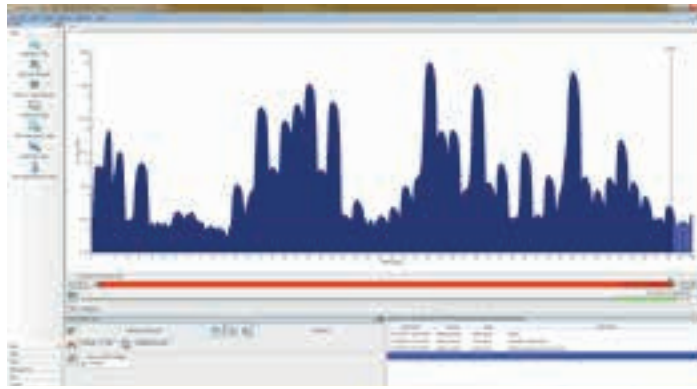
The HPA 220 are supplied with user-specific operating software which can be operated intuitively. The Quadera® based software package is used to operate the devices. This package contains analysis routines for the process gases Ar, Ar+N₂, Ar+N₂+O₂ and for residual gas analysis.



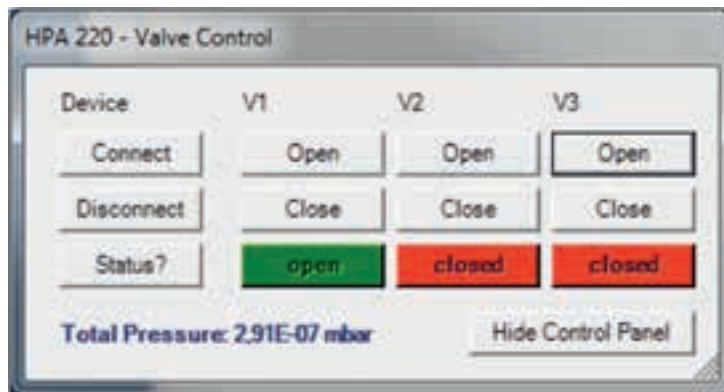
User-specific Quadera® software



Example of an HPA user interface



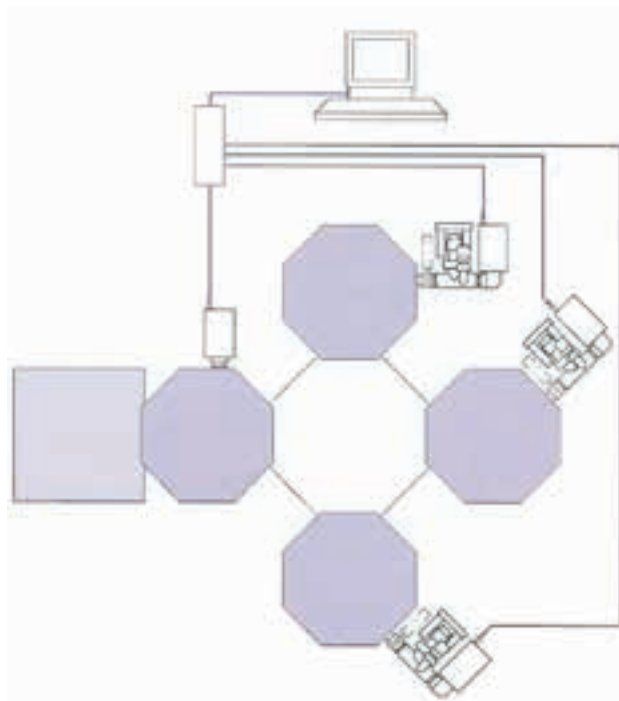
HPA-220 air and argon



Control unit for the gas inlet system

Multiplex operation

The HPA 220 can be integrated in a complex system through an Ethernet connection. This enables simultaneous data evaluation of several mass spectrometer systems through a single central PC.



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