edwardsvacuum.com

PRA & WRA RESIDUAL GAS ANALYSERS (RGA)

EDWARDS

EDWARDS
THE PARTNER OF CHOICE

Edwards is a world leader in the design, technology and manufacture of vacuum pumps with over 100 years of history and more than 80 years of manufacturing experience.

We believe in delivering results that bring value to our customers by using our breadth of industry experience to identify and apply solutions to your problems. Using the most innovative and up-to-date modeling techniques, we can optimise the pumping configuration for customers to provide a system design giving the maximum performance in the most reliable and cost-effective way.

CONTENT

RESIDUAL GAS ANALYSER

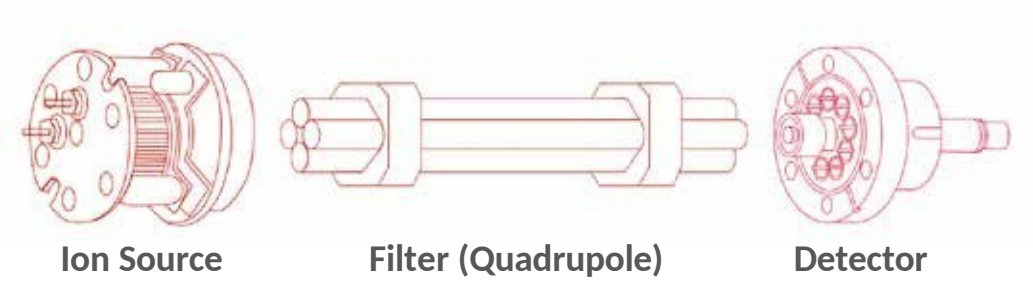
RESIDUAL GAS ANALYSER

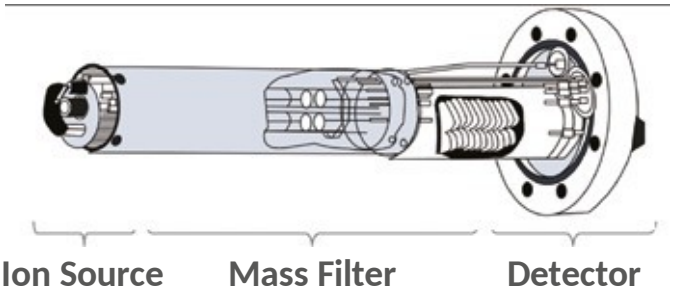
The perfect balance of high end performance and accessibility

Description of the technology

The Edwards RGAs are quadrupole mass spectrometers with a high performance analyser tube consisting of the ion source, the quadrupole filter and the detector. Exposed to vacuum, the gas molecules are ionized by the RGA.

Dependent on the weight or mass of the molecules, the ions have a different mass to charge ratio. By varying the voltage the RGA can measure the different masses: Only ions with the specific mass to charge ratio find their way into the detector where the ionized gas molecules are then measured. With this procedure, the RGA shows the composition of the gas in the system/chamber/process.





Application and markets

RGAs do analysis of gases and their composition, this is needed for:

- Leak detection and identification
- Find and identify contaminants
- Verify gas purity
- Product/process quality assurance
- Process & equipment diagnostics and control
- Optimize process performance and yield

Our RGAs are the perfect solution in a wide range of applications:

- Semiconductor processes
- Thin-film and display
- Vacuum heat treatment
- Vacuum freeze drying
- Research & development
- High energy physics

Choosing the right RGA

We offer two variants, giving you the perfect choice for your various needs.

PRA: Our Primary Residual Gas Analyser is the perfect solution for all “basic” applications and processes, to do quick and convenient analysis.

WRA: Our Wide Range Residual Gas Analyser, for advanced and more demanding processes and analysis allowing higher analyzer temperatures and bake out temperatures of up to 300°C. To match advanced needs, the WRA offers a better sensitivity to detect even the smallest traces of molecules.

The Edwards RGAs offer the unique feature of integrated display and control combined with an intelligent RGA software with full Ethernet Protocol accessibility, which allows you to use all available functions of the supplied software within your own software or PLC and that is intuitive to operate. The RGA is an extremely reliable gas measurement instrument, delivering great performance in all areas of residual gas analysis. Customers benefit from intelligent software functions and gas detection set-ups. Important functions are pre-installed, which facilitates a plug- and-play. The Edwards RGAs are ready-to-go: They come with all accessories and software needed to do residual gas analysis. We offer full application support, through a dedicated team that will help you implement your Edwards RGA into your process. Contact Edwards for more information.

Some of the unique benefits are:

Total pressure measurement for full process control

Dual filament for highest reliability and up-time

On unit display for basic measurements without a PC

Customer replaceable parts

Degas function

Protection of ion source and EM

Technical data

	PRA100	PRA100S	PRA200	PRA200S
Mass range (amu)	1-100	1-100	1-200	1-200
Mass filter type	QMS	QMS	QMS	QMS
Detector type	Faraday cup	EM/Faraday Cup	Faraday Cup	EM/Faraday Cup
Sensitivity (A/mbar)	$1x10^{-5}$	$400/1x10^{-5}$	$1x10^{-5}$	$400/1x10^{-5}$
Minimum detectable partial pressure (mbar)	$1x10^{-10}$	$1x10^{-14}/1x10^{-10}$	$1x10^{-10}$	$1x10^{-14}/1x10^{-10}$
Max operating pressure (mbar)	$1x10^{-4}$	$1x10^{-4}$	$1x10^{-4}$	$1x10^{-4}$
Filament material	Ir/Y2O3	Ir/Y2O3	Ir/Y2O3	Ir/Y2O3
Operating temp (°C)	40	40	40	40
Max analyser temp (°C)	120	120	120	120
Max bake out temp (elec removed) (°C)	250	250	250	250
Connection flange	DN40CF	DN40CF	DN40CF	DN40CF
Power input	DC24V +-10% 50W	DC24V +-10% 50W	DC24V +-10% 50W	DC24V +-10% 50W
Weight (kg)	2.6	2.84	2.6	2.84
IP	30	30	30	30
Serial communication	RS485	RS485	RS485	RS485
Resolution	M/DeltaM=1M(10%PH)	M/DeltaM=1M(10%PH)	M/DeltaM=1M(10%PH)	M/DeltaM=1M(10%PH)

	WRA200S	WRA300S
Mass range (amu)	1-200	1-300
Mass filter type	QMS	QMS
Detector type	EM/Faraday Cup	EM/Faraday Cup
Sensitivity (A/mbar)	$400/2.5x10^{-4}$	$400/2.5x10^{-4}$
Minimum detectable partial pressure (mbar)	$1x10^{-15}/1x10^{-11}$	$1x10^{-15}/1x10^{-11}$
Max operating pressure (mbar)	$1x10^{-4}$	$1x10^{-4}$
Filament material	Ir/Y2O3	Ir/Y2O3
Operating temp (°C)	40	40
Max analyser temp (°C)	250	250
Max bake out temp (elec removed) (°C)	300	300
Connection flange	DN40CF	DN40CF
Power input	DC24V +-10% 50W	DC24V +-10% 50W
Weight (kg)	3.21	3.21
IP	30	30
Serial communication	RS485	RS485
Resolution	M/DeltaM=1M(10%PH)	M/DeltaM=1M(10%PH)

Ordering information

Product description	Order number
WRA200S	D05002202
WRA300S	D05002302
WRA-S analyzer tube	D05002015
WRA200S/300S filament kit	D05002014
WRA200S/300S ion source	D05002013
WRA200S/300S SEM	D05002012
PRA100	D05001101
PRA100S	D05001102
PRA200	D05001201
PRA200S	D05001202
PRA100/200 analyzer tube	D05001016
PRA100S/200S analyzer tube	D05001015
PRA ion source	D05001013

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