

Анализаторы остаточных газов, масс-спектрометры RGA, первичные газоанализаторы PRA, анализаторы остаточных газов WRA RGA, eRGA1

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: ewc@nt-rt.ru || сайт: <https://edwards.nt-rt.ru/>

RESIDUAL GAS ANALYSER SYSTEM eRGA1

Residual gas analysers perform analysis of gases and their composition, the eRGA1 Residual Gas Analyser System has been designed to take that a step further.

The eRGA1 combines an Edwards **PRA/WRA** Residual Gas Analyser and a **T-station 85** turbomolecular pumping station.

It is a fully customisable system capable to cope with differing pressures, making it **a truly multi purpose gas analyser.**

By supplying a wide range of inlet options for total flexibility when connecting to almost any process, a UHV high conductance valve, a UHV leak tight variable pressure valve or a Orifice and Bypass option: eRGA1 offers **precise analysis whatever the pressure requirement.**

ERGA¹



FEATURES AND BENEFITS

- Easy to use
- Table top configuration
- Choice of turbomolecular pumping station
- Multiple inlet options
- Suitable for all RGA versions
- Easy and intuitive software for RGA

APPLICATION AND MARKETS

ERGA1 system are configurable with pumping system, sealing type and RGA version. Whether oil free all metal seal of a simple rotary vane pump and o ring seal version the Edwards RGA rig provides a solution of gas analysis.

RGAS DO ANALYSIS OF GASES & THEIR COMPOSITION, THIS IS NEEDED FOR:

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

PERFORMANCE, OPERATING & STORAGE DATA

	Units	ERGA1
Pressure range without inlet option	mbar	From 1×10^{-4}
Pressure range for UHV High conductance valve option	mbar	From 1×10^{-4}
Pressure range for UHV Leak valve option	mbar	From atmospheric pressure to 5×10^{-8}
Pressure range for Orifice and Bypass option	mbar	From 0.04 to 0.01 (1mm orifice), other sizes upon request.
Ultimate pressure	mbar	$< 5 \times 10^{-8}$ 48 hours after bakeout with baking pressure < 5 mbar (500 Pa).
Degree of protection (to IEC34-5: 1981)	IP	20
Ambient operating temperature range	°C	+12 to +40
Ambient storage temperature range	°C	-30 to +70
Maximum ambient operating humidity	°C	max. 90% RH non-condensing at +40
Maximum operating altitude	m	max. 2000

ORDERING INFORMATION

CODE RGA			Pump type T-STATION	RGA type	Inlet option	Gauge
RGA	0	0	A = DRY CF63 200-230V	0 = NO RGA option	0 = NO Inlet option	0 = NO gauge
			B = DRY ISO63 200-230V	1 = PRA100	1 = UHV High conductance valve	1 = AIM200-X-NW25
			C = DRY CF63 100-120V	2 = PRA200	2 = UHV Leak Valve	2 = WRG200-X-NW25
			D = DRY ISO63 100-120V	3 = PRA100S	3 = Orifice & bypass	3 = AIM200-X-DN40CF
			E = WET CF63 200-230V	4 = PRA200S		4 = WRG200-X-DN40CF
			F = WET ISO63 200-230V	5 = WRA200S		
			G = WET CF63 100-120V	6 = WRA300S		
			H = WET ISO63 100-120V			
			I = DRY mXDS3s CF63 200-230V			
			J = DRY mXDS3s ISO63 200-230V			
			K = DRY mXDS3s CF63 100-120V			
			L = DRY mXDS3s ISO63 100-120V			

Rough notes for reference only: RGA rigs are configurable with pumping system, sealing type and RGA version. Weather oil free all metal seal of a simple rotary vane pump and o ring seal version the Edwards RGA rig provides a solution.

A wide range of inlets are available from a simple high conductance valve, to variable pressure options or fully customisable inlets are available.

Publication Number: 3601 0784 01.

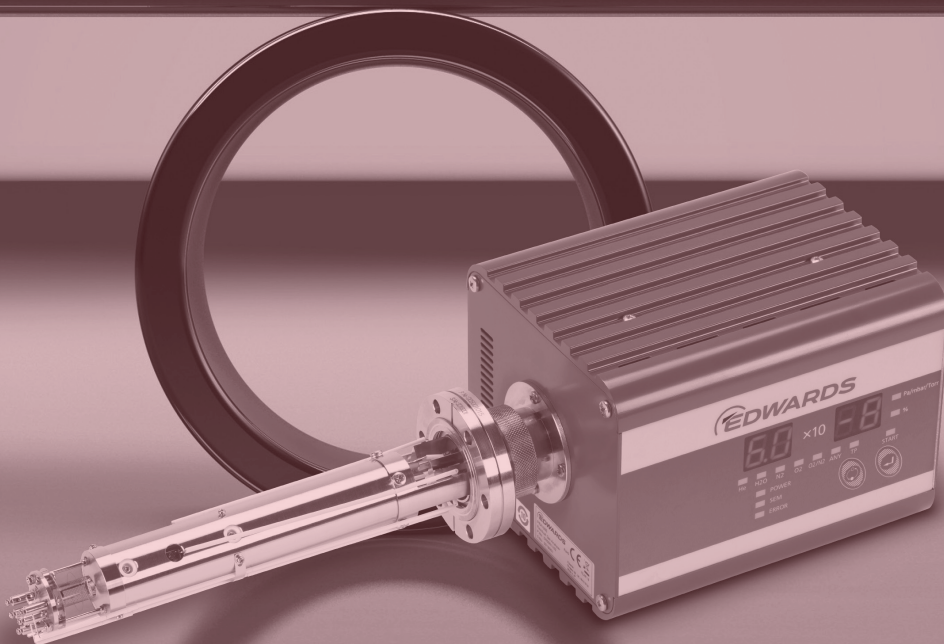
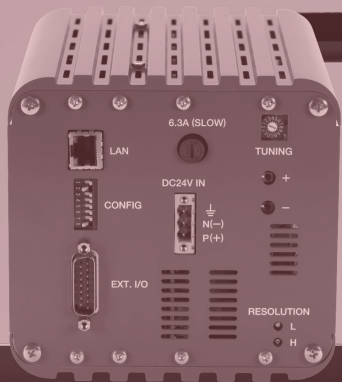
© Edwards Limited 2024. All rights reserved. Edwards and the Edwards logo are trademarks of Edwards Limited.

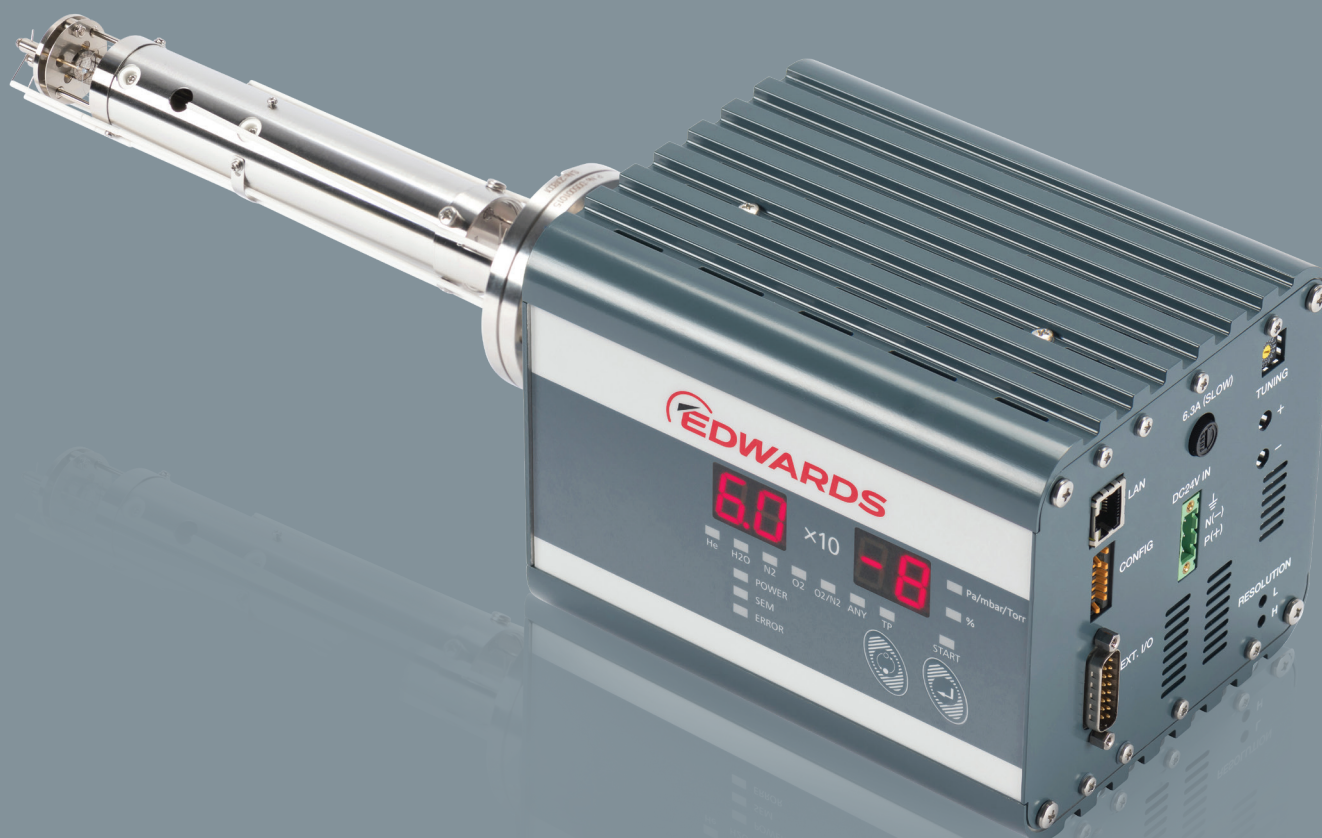
Whilst we make every effort to ensure that we accurately describe our products and services, we give no guarantee as to the accuracy or completeness of any information provided in this Datasheet.

Edwards Ltd., registered in England and Wales No. 6124750, registered office: Innovation Drive, Burgess Hill, West Sussex, RH15 9TW, UK.



PRA & WRA RESIDUAL GAS ANALYSERS (RGA)

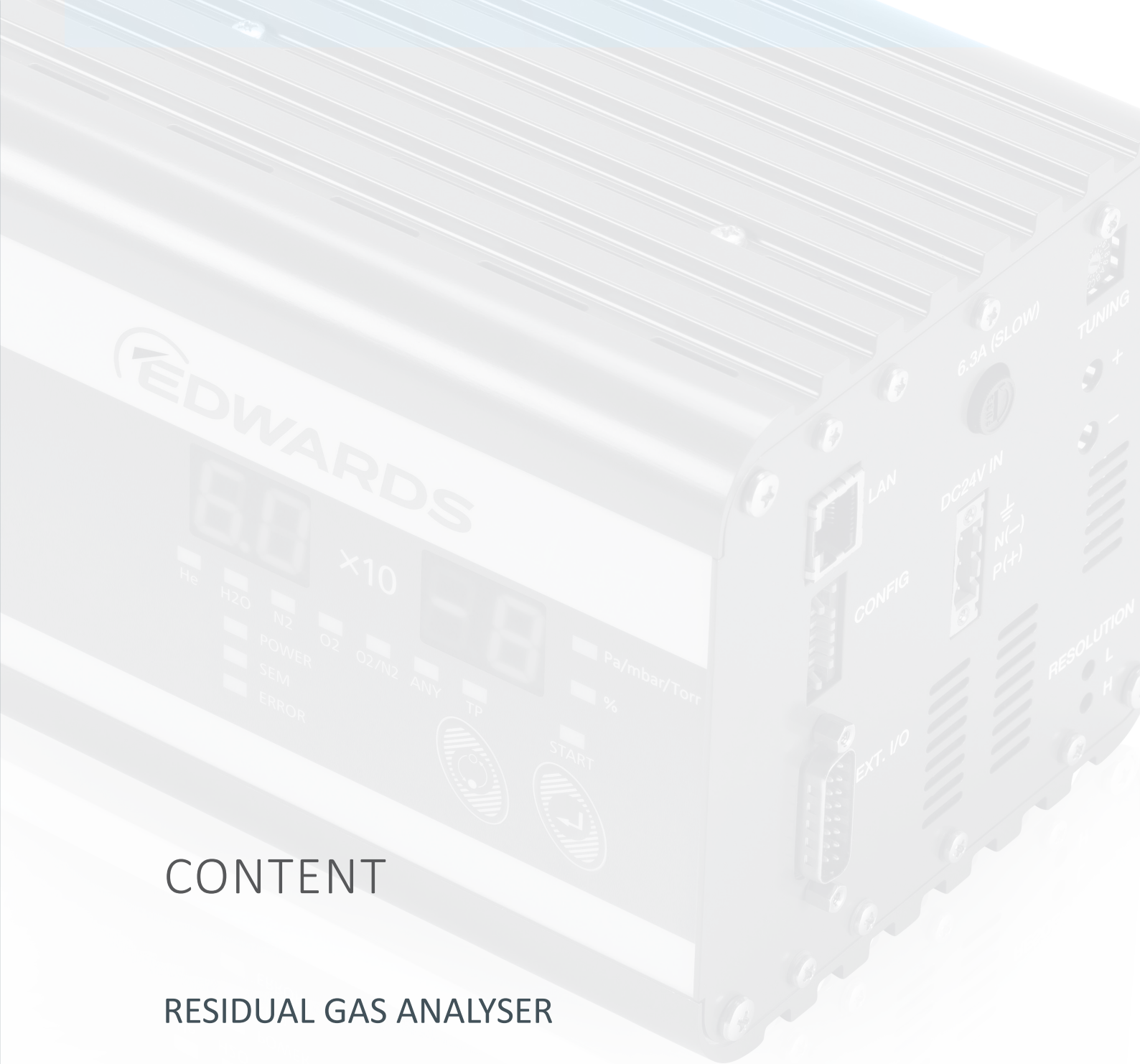




EDWARDS THE PARTNER OF CHOICE

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

- Description of the technology
- Application and markets
- Choosing the right RGA
- Technical data
- Ordering information

RESIDUAL GAS ANALYSER

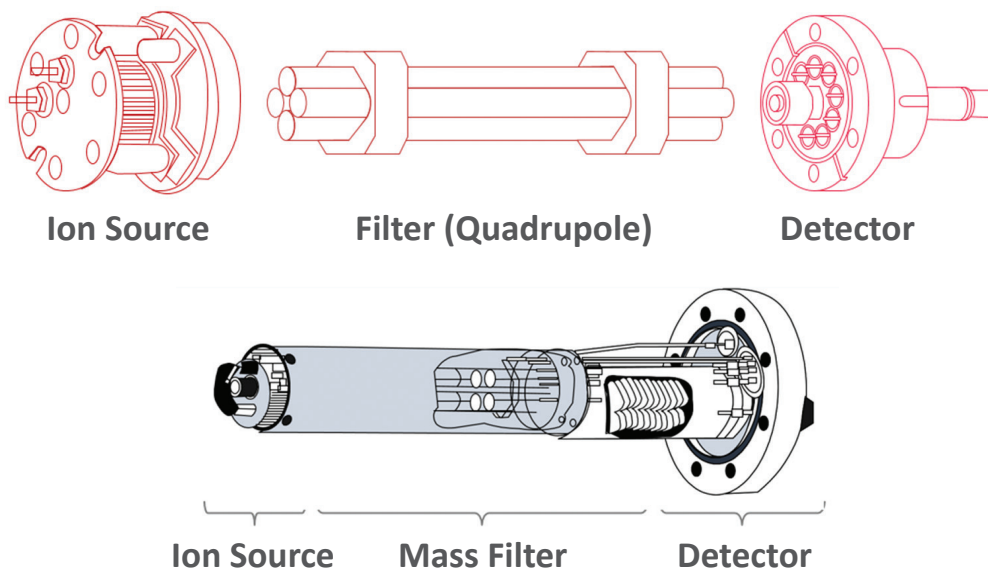
The perfect balance of high end performance and accessibility

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



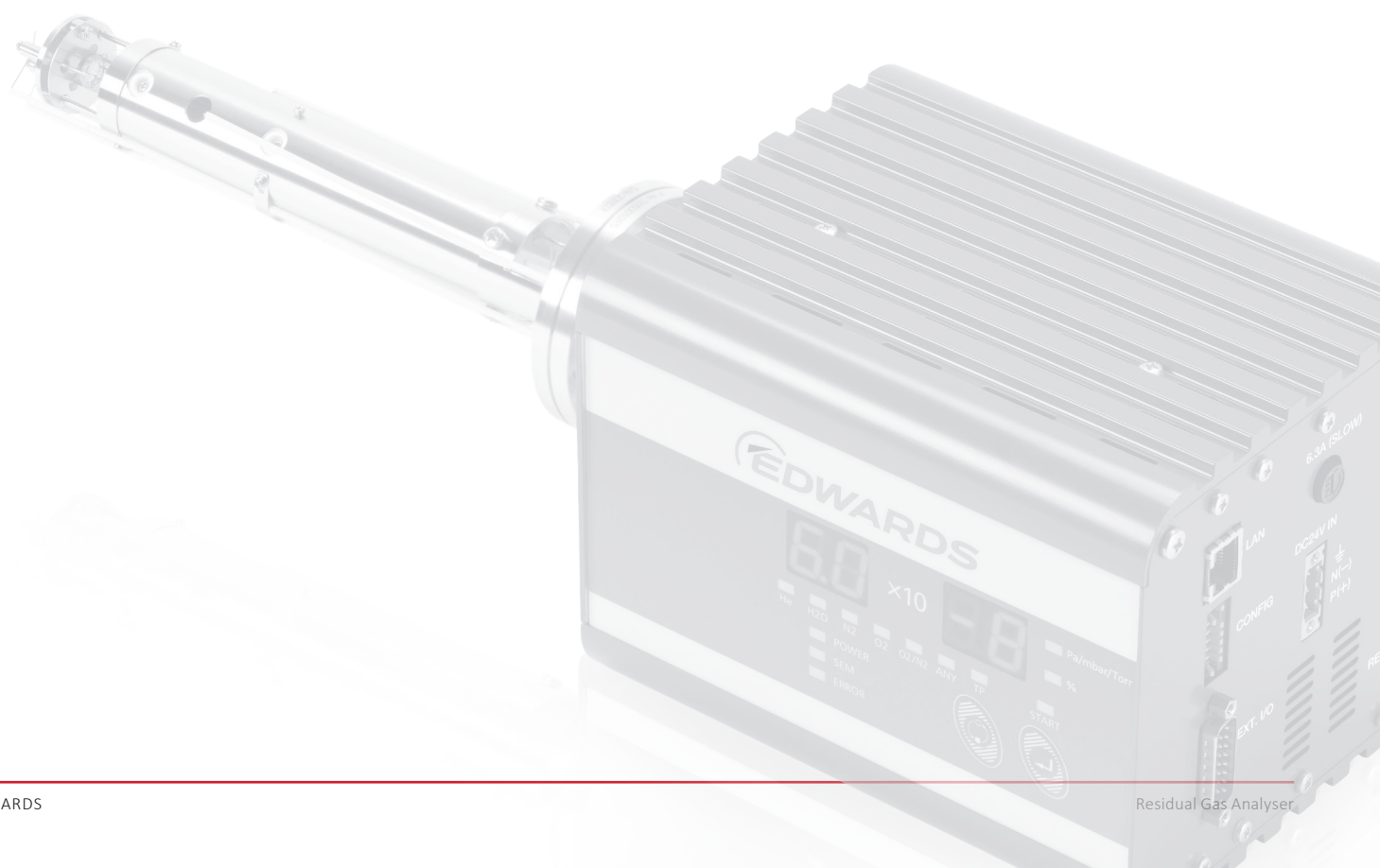
TECHNICAL DATA

	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



PRA & WRA RESIDUAL GAS ANALYSERS (RGA)

Our new RGA includes two variants: PRA & WRA, both come with simple and effective operation assuring high performance and efficiency.

Edwards PRA RGAs deliver the perfect balance of high end performance and accessibility. Available in four variants to suit your process needs, whether you just need a basic model or something with more sensitivity/range, the PRA is the perfect starting point for analysing your processes.

The WRA RGAs from Edwards are our top of the line models, with market leading specifications. Available in two variants 1-200 or 1-300 amu, you can measure a wide range of gasses/by-products from your processes. This is paired with increased sensitivity compared to the PRA to allow for greater accuracy from your measurements.

All RGAs have full Ethernet Protocol, which allows you to connect directly to your own PLC and are equipped with dedicated, easy-to-use software which allows you to track your process in real-time from your laptop and do detailed analysis of up to 16 different units.

For those wanting a snapshot view, the units have a unique on-board display which can show you the main gas types as well as the overall pressure of your system without having to connect via laptop.



FEATURES AND BENEFITS

- Total pressure measurement
- Dual filament
- On unit display
- Customer replaceable parts
- Degas function
- Protection of Ion source and EM

APPLICATIONS

PRA

- Residual gas analysis in high vacuum pumping equipment
- Gas analysis in R&D
- Gas analysis in Freeze drying
- Gas analysis in PV/FPD/Semi

WRA

- Residual gas analysis in UHV pumping equipment
- Analysis of organic materials
- Environmental tracking
- Gas impurity

TECHNICAL DATA AND ORDERING INFORMATION

	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)	1×10^{-5}	$400/1 \times 10^{-5}$	1×10^{-5}	$400/1 \times 10^{-5}$
Minimum detectable partial pressure (mbar)	1×10^{-10}	$1 \times 10^{-14}/1 \times 10^{-10}$	1×10^{-10}	$1 \times 10^{-14}/1 \times 10^{-10}$
Max operating pressure (mbar)	1×10^{-4}	1×10^{-4}	1×10^{-4}	1×10^{-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	Product description	Order number
Mass range (amu)	1-200	1-300	WRA200S	D05002202
Mass filter type	QMS	QMS	WRA300S	D05002302
Detector type	EM/Faraday cup	EM/Faraday cup	WRA-S analyzer tube	D05002015
Sensitivity (A/mbar)	$400/2.5 \times 10^{-4}$	$400/2.5 \times 10^{-4}$	WRA200S/300S filament kit	D05002014
Minimum detectable partial pressure (mbar)	$1 \times 10^{-15}/1 \times 10^{-11}$	$1 \times 10^{-15}/1 \times 10^{-11}$	WRA200S/300S ion source	D05002013
Max operating pressure (mbar)	1×10^{-4}	1×10^{-4}	WRA200S/300S SEM	D05002012
Filament material	Ir/Y2O3	Ir/Y2O3	PRA100	D05001101
Operating temp (°C)	40	40	PRA100S	D05001102
Max analyser temp (°C)	250	250	PRA200	D05001201
Max bake out temp (elec removed) (°C)	300	300	PRA200S	D05001202
Connection flange	DN40CF	DN40CF	PRA100/200 analyzer tube	D05001016
Power input	DC24V +-10% 50W	DC24V +-10% 50W	PRA100S/200S analyzer tube	D05001015
Weight (kg)	3.21	3.21	PRA ion source	D05001013
IP	30	30		
Serial communication	RS485	RS485		
Resolution	M/DeltaM=1M(10%PH)	M/DeltaM=1M(10%PH)		



По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижегород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: ewc@nt-rt.ru || сайт: <https://edwards.nt-rt.ru/>