

Rasi 400 Portable Emission Analyser



Rasi 400 Emission Analyser

Rasi 400 high lights



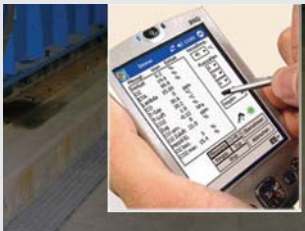
4 cells Analyser
Simultaneous installation of four electrochemical cells for O₂, CO, NO, NO₂ and/or SO₂. A true Nox emission analyser



Modular Probe
Selection of probes with removable shaft for different length and with special Viton line for temperatures up to 1100 C



Hand Free Operation
Thanks to its built-in magnet the operator can freely tune the engine while the analyser is taking measurement



Real time data transfer
wireless real-time data transfer to a PDA or PC. The operator can adjust the boiler/engine from the control room while the analyser is taking measurements



Display
Large backlight display with simultaneous display of 8 combustion parameters, measuring programme and menu keys

Portable, light and thin 4 cells emission Analyser

The Rasi 400 is a new generation of emission analysers especially developed and tailored to the industrial market. It's the smallest, lighter and thinner analyser that can simultaneously install up to 4 electrochemical cells for measuring O₂, CO, NO, NO₂ and SO₂ gases. It matches the needs of operators in industrial plants such as power plants, gas engines, industrial and utility boilers

A True Nox emission analyser

Simultaneous installation of 4 cells for O₂, NO, NO₂ and CO enable the analyser to measure and report the Total Nox (known as True NO_x) and the Carbon Monoxide values at the same time without any assumption or change of cells while in the field. Particularly indicated in applications such as gas engine tuning on land field gases where the NO₂ concentration can change dramatically.

Rasi 400 features



Rasi 400 Emission Analyser

Measurements to suit every industrial Application

Just use a Rasi 400 for tuning your combustion process and you will immediately feel the differences that we deliver:

- Simultaneous display of up to 8 combustion parameters enable the operator to tune or setting a combustion process with-out the need to go trough annoying sub pages. You can configure your self the display in the way you want it.
- O₂ variable reference for emission reporting, calculation of all the combustion parameters, Emission levels can be reported in differents unit such as in ppm, or mg/m³, mg/KWh to suits different application and reporting requirements.
- Additional function such as pressure, gas flow and dew point calculations expand the capabilities of your analyser

Easy of use

- Highly intuitive menu, with three bottom function key to navigate trough and select the desired function
- Up to 5 user difined measurement programme with the setting of parameters such us CO cut off limits and O₂ reference value can be easily recalled with a push of a thumb.

Extensive data logging

- Save Paper. If you dont need to print, why dont you just save the measured data on the Rasi400 or even better just read your data in real time on a PC or PDA.
- File/data management and reporting is effortless with the ON-Line software package. Customer data can be exported /imported from a PC to the Rasi 400. Measurment data are then downloaded to a PC for post analysys

Robust and protected

Like all our product the Rasi 400 is desinged to reliably operate in industrial einveroment. Its special internal designe protect the unit from measurement cells detoriations...it will not let you down on operation

- Newley designed external water trap and filters to prevent condensate to reach the measuremet cells thus extending the life of measurement cells
- Additional 2nd purge pump, CO cut off limit to protect the CO cell from contamination especially during engine or boiler start up



Real Time data transfer

Real time data transfer allows one user to carry on operation such adjusting engine/boliers remotely



Field replaceable rechargeable batteries

gives you maximum flexibility no matter where your work takes you. Both rechargeable and standard batteries can be installed in the Rasi 400. You will never run out of steam. Enjoy the freedom of using commercial batteries. The new optional 3 in 1 universal charger base will charge your batteries from a Car, a PC or main power

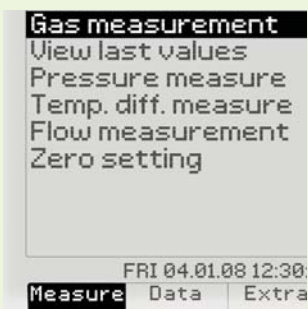
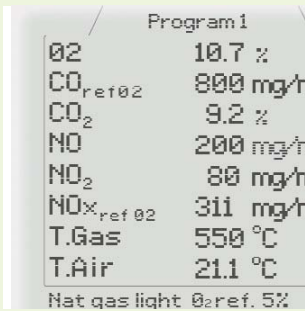
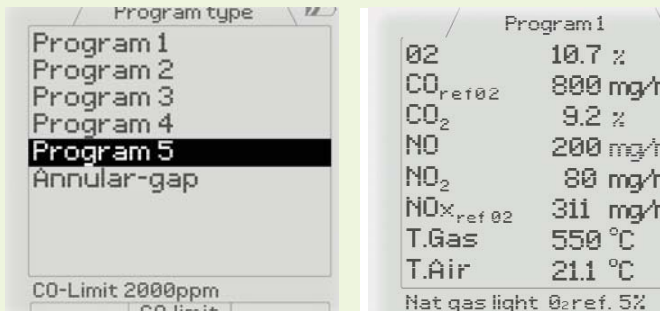


Fast Infrared Printer

Newly designed fast infrared printer allows you to quickly print the test results. The new printer allows for printing even with a poor alligment.

Rasi400 Easy menu

Rasi 400 Displays and menu



Display

Large backlight display user programmable allows to display up to 8 parameters simultaneously including the measurement units, selected measurement programme and 3 function key for easy access to sub menu functions. The user can pre set up to 5 different measurement programme, each including selected measurements parameters, fuel, and Oxygen reference. The measurement programme is then recall before starting the gas analysis. The display also feature a very useful zoom function.

Measuring programme

Rasi 400 allows to pre-define up to 5 measurement programme which can be changed and stored as required. The measuring programme configure the unit for specific uses. Parameters such as CO cut off level, fuel type and O2 reference can be defined. Once on field, the user can simply select the required programme and the Rasi400 is ready to go

Flow Gas Velocity

With the optional pressure input and a type S pitot tube, Rasi400 allows for the measurement of the Gas Velocity/Flow in a stack or duct. Just simply select the flow measurement programme and the display will guide you through the settings for correct measurement

Data Management

Rasi 400 can store up to 100 sites with customers details. The site details can be imported/exported from/to the Analyser. Once the measurement are taken, you can then store them to the selected site for later recalling, printing or downloading to a PC/PDA

Rasi 400 waste probe selection

Probe to suit every application

Our range of probes and hoses cover every application with an extended temperature range up to 1100 C and different sizes .

All probes types have interchangeable shaft, position cone and measure temperature by using an integrated thermocouple type K. A special sampling line is used to maximise the accuracy reading when measuring NO2 and SO2 cells are installed.

- Choise of different probe shaft up to 2000 mm
- 2700 or 5000 mm lenght Viton sampling line with water trap
- Choise of optional preliminary filter

Interchangeable Shaft for maximum flexibility

It is important to select the right probe depending of your application. A basic criteria would be to know the maximum temperature and the diameter of the flue/stack. Remember the probe should be positioned in the middle of the stack. Eurotron modular sampling probes offer the greatest flexible solution to match the need of the application and reduce cost at the same time. All you need is one sampling modular probe and a choice of probe shaft to suit at the best your needs.

Advance water trap extend cells life

The newly designed water trap protect the analyser cells from moisture and dirt contamination extending their operating life. The trap has been designed to be esly emptied on field.



Gas Sampling Probe Selection

Gas Sampling Probes

Modular Flue gas probe, available in two different lenght, incl. water trap and particle filter, integrated Tc Type K for Temperature measurement, continous draft measurement. Please select at least one replaceable tip

62067	Modular gas sampling handle complete with 2700 mm VITON Line
62068	Modular gas probe handle complete with 5000 mm VITON Line

Probes replaceable shaft

55583	300 mmx 8 mm probe shaft, Tmax 650 C
59292	500 mm x 8 mm probe shaft , Tmax 650 C
55672	750 mm x 10 mm probe shaft, Tmax 650 C
55673	1000 mm X 10 mm probe shaft, Tmax 650 C
55674	1500 mm X 10 mm probe shaft, Tmax 650 C
55464	2000 mm X 10 mm probe shaft, Tmax 650 C

Probes replaceable shaft, High Temperature

60626	750 mmx 8 mm probe shaft, Tmax 1100 C
56737	1000 mm x 8 mm probe shaft , Tmax 1100 C
56738	1500 mm x 10 mm probe shaft, Tmax 1100 C

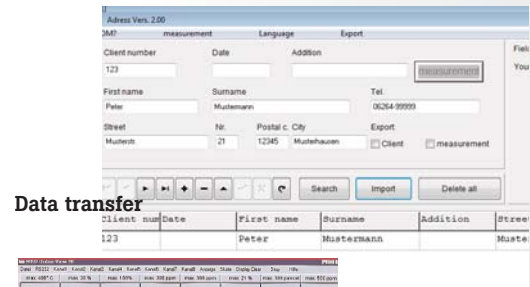
Probes replaceable shaft, with preliminary filter

60183	750mm x 10 mm probe shaft, Tmax 500 C with sintered metal filter
60814	1000mm x 10 mm probe tip, Tmax 500 C with sintered metal filter
60815	1500mm x 10 mm probe tip, Tmax 500 C with sintered metal filter

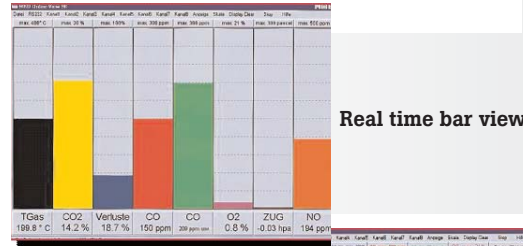
OnLine View Software

The online view software package allow the user to control the Rasi400 from a PC. The software provide excellent data management capability and the possibility to import/export data from the Rasi 400 as well as real time data transfer

- Import/Export customer details
- Downloading of data measurements from RASI4 00 to the PC
- Real time data transfer with customised view
- View in numerical format, barograph, or graphical trend
- Display of Max, Min, AVG values
- Quick and east data transfer into Excel files

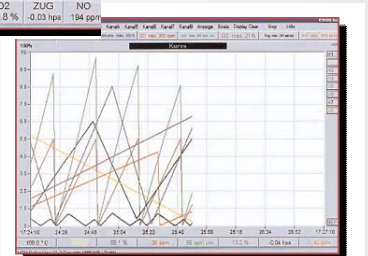


Data transfer



Real time bar view

Graphical View

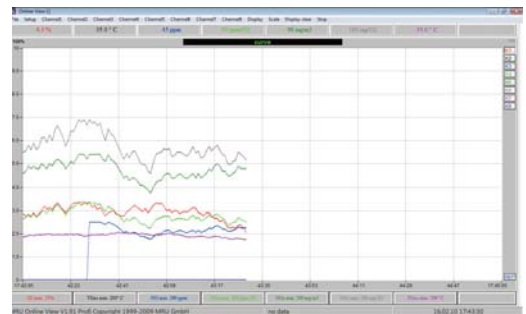


Real Time Data Transfer

Rasi 400 allow for real time data transfer to a PC or a PDA. Data can be transferred wirlessly trough the optional Blue tooth module or via RS232 cable or USB

User can view the data in real time on a PC, both in graphical, numeric or disply format. Data can be saved into files.

Enjoy the power of adsjuting an engine/boiler from the control room. Simply leave the anlayser to take the measurment and confortably set your emgine from teh control room by reading in real time the data on a PC or PDA



Specifications

	Sensor Type	Range minimum	Range maximum	Resolution	Accuracy (Which ever is greater)	Notes
Measured Gases						
O2	Electrochemical	0-21 %	0-25 %	0.1 %	± 0.2 % absolute	T95 < 20s
CO (H2) comp.	Electrochemical	0-2000 ppm	0-10.000 ppm	1 ppm	<200 ppm= ± 10ppm or ± 10% rdg >200 ppm=± 20ppm or ± 5 % rdg >2000 ppm= ± 10% rdg	T90 < 40s
CO (high)	Electrochemical	0-4 %	0-10 %	0.1%	<0.4%= ± 0.02 or ± 5 % rdg >0.4%=± 10 % rdg	T90 <40 s
NO	Electrochemical	0-1.000 ppm	0-5000 ppm	1 ppm	<1000 ppm= ± 5 ppm or ± 5 % rdg >1000 ppm=10 % rdg	T90 < 30s
NO2	Electrochemical	0-200 ppm	0-1000 ppm	1 ppm	<200 ppm= ± 5 ppm or ± 5 % rdg >200 ppm=10 % rdg	T90 < 60s
SO2	Electrochemical	0-2000 ppm	0-5000 ppm	1 ppm	<2000 ppm= ± 10 ppm or ± 5 % rdg >2000 ppm=10 % rdg	T90< 40s
Temperature/Differential temperature						
Combustion Air	Type K	-50 to 250 C	-50 to 250 C	0.1 C	± 1C	
Stack Gas Temperature	Type K	0-650 C	0-1100 C	0.1 C	± 1C	Probe dependant
Stack Gas Temperature	Type K	0-1100 C	0-1100 C	1 C	± 1C	Probe dependant
Pressure/Flow (optional)						
Draft/Differential Pressure	Piezoresistive	± 100 mbar	± 100 mbar	0.1 mbar	± 0.02 mbar	
Flow Velocity		1 m/s to 100 m/s	1 m/s to 100 m/s	0.1 m/sec	± 1 m/sec or 3 % rdg	Require Pitot Tube
Calculated values						
CO2 %		0 to CO2% max	0 to CO2% max	0.1%	± 0.3 % Vol abs	
Combustion Efficiency	0 to 120 %					
Heat Loss	0 to 99.9 %					
Excess Air	1 to 99.9 %					
Dew Point	Deg C					
Flow Velocity		1 m/s to 100 m/s	1 m/s to 100 m/s	0.1 m/sec	± 1 m/sec or 3 % rdg	
Reference to O2, NOx	mg/Nm3, ppm, NOx in mg/m3, NO2, NO+NO2=NOx					
Fuels:	all common fuels, i.e Nat Gas, Heavy Oil, Light Oil, Biofuel, Wood Pellet, Coal, etc.. plus user definable					
Data Management						
Memory	100 sites					
Communication	RS232, Optional Blue-tooth module for PC/PDA data transfer					
Data Transfer	Real time measurement, data logging					
Power						
Standard	Internal NI-MH rechargeable battery, field replaceable (4 x 1.2 V)					
AC adapter	AC/DC adapter/charger 110-250 VAC, 50/60 HZ					
Charger Base (opt)	Optional Charger base 110-250 VAC, 50/60 HZ, universal plug- include 4 x 1.2 V battery					
Battery Operating time	8 hours					
Enviromental and mechanical design						
Operating Temperature	5 to 45°C					
Storage Temperature	-20 to 50°C					
Relative Humidity	max 95 % RH non condensing					
Water and dust resistance	IP 42					
Housing	moulded ABS					
Size (W xHx D)	75 mm x 210 mm x 55 mm					
Weight	750 g (include batteries)					
Others						
Warranty	1 year including working parts and cells					
Certification	TUV approval EN 50379-2					
Pump suction	150 hPa					
Display						
Type	Custom LCD backlight graphical display					
Lines	4 or 8 line user selectable, zoom function					
Display	values, functions, charging status, data and time					

Ordering information and accessories

How to Order your Rasi 400:

- Rasi400 analyser with O2 cell
- Select any additional sensors (up to 3 max)
- Select any additional Options
- Select Probe and probe shaft
- Select any additional accessories

Part no.	Rasi400 emission analyser
944008	RASI400 emission analyser, equipped with O2 sensor, rechargeable battery, main charger and calibration certificate
Part no.	Optional sensors
59699	Option: CO (H2) sensor, max range 10000 ppm
59699	Option: NO sensor
59731	Option: NO2 sensor
59732	Option: SO2 sensor
59939	option: CO sensor, high range 4 %
60644	Option: Pressure/Flow measurement module
Part no.	Options (to be factory fitted)
61511	Blue Tooth module for wireless data transmission to PC/PDA
62075	Additional purging pump for sensor protection (CO)

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Expand your Rasi 400 combustion analyser capabilities with the following accessories



15151
OnLine View software



51833
Manual Smoke pump



59459
Fast WireLess Thermal Printer



62100
Robust ABS case



60157
USB converter for data transmission



60157
3 in 1 rechargeable battery base- Charge in teh Car, trough a USB port or from the main



Pitot Tubes

85120 Pitot Tube, 6 mm dia, x 300 mm lenght

85130 Pitot Tube, 6 mm dia, x 500 mm lenght

85132 Pitot Tube, 6 mm dia, x 800 mm length

85133 Pitot Tube, 8 mm dia, x 1000 mm length



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



UK Office

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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.