

# RASI 700

## The true 8 gases

### Emission/Combustion Analyser



#### All this in the palm on your hand, a true 8 gases combustion/emission analyser with CO<sub>2</sub> % /CH<sub>4</sub> % NDIR

RASI 700 is the smallest hand held emission/combustion analyser capable to install up to 7 measurements cells simultaneously. It's has been deisgned and devolpoed to meet increasing demand of combustion and emission analysys in hard to reach location such as stacks and industril Flue. We have brought emision analisys to the palm of your hand

#### Measurement Functions

- Standard configuration fitted with O<sub>2</sub> cell
- additional 7 toxics cells can be installed at teh same for measurement of CO, LowCo, NO, Low NO, NO<sub>2</sub>, SO<sub>2</sub>, H<sub>2</sub>S, and CO<sub>2</sub>%/CH<sub>4</sub>% using NDIR infrared technology
- Mesure Temperature and differential Temperature
- Measure Pressure, draft and differential pressure
- Measure Flow Gas Velocity and total mass calculation
- Calculate all combustion paramters such as, CO<sub>2</sub>%, Efficiencies readings, Lamba, Excess Air and CO/CO<sub>2</sub> Ratio

#### Features

- Well readable 6 lines 3.5" TFT colour diplay
- Integrated advanced water trap with re-usable special coated filter
- Universal charging trough mini-usb port
- Integrated data memory with up to 1000 site- Optional SD card to extended memory logging
- Real time data transfer to a PC or Laptop
- USB data transfer or optional Blue tooth communication
- Documenting fetatures
- Highly Intuitive task driveb menu with direct function keys
- Protective rubber sleeve with magnet
- Fast Infrared printer
- Emission reporting both in mg/m<sup>3</sup> or mg/sec
- Special selected Low CO and Low NO cells for 0.1 ppm resolution
- Choice of 10 fuel type and any additional fuel user selctable

### Space for 8 measurement gas sensors to meet most of the application

Each RASI 700 is fitted as standard with an O<sub>2</sub> measurement sensor - additional 5 electrochemical cells for HI CO, LowCO, NO, LowNO, NO<sub>2</sub>, SO<sub>2</sub> and H<sub>2</sub>S measurments and a CO<sub>2</sub>%/CH<sub>4</sub>%-IR bench can be installed simultaneoulsy. There is no needs to swap sensors to measure different gases. The special selected and calibrated Low NO an Low CO read with resolution to 0.1 ppm. What is even more important, a combination of Low Range and high mesurment range can be installed at the same time.

#### Pre calibrated sensors

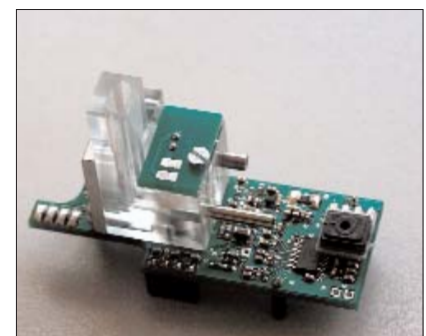
To easy the service of the RASI700, a range of pre-calibrated measurement cells can be supplied- The user can then simply install the new measurment cell and loading the coefficients that are supplied along with them

#### Instruments dignostic

advance disgnostic menu shows in real time the sensors status along with other important information of the unit.

#### CO<sub>2</sub>/CH<sub>4</sub> -IR Bench

An optional CO<sub>2</sub>%/CH<sub>4</sub>% -IR bench using non dispervice infrared technology can be installed for direct mesurement of CO<sub>2</sub>%and CH<sub>4</sub> % in industrial combustion process- In application such industrial boilers, stack measurements or processes where CO<sub>2</sub>% is realeased by raw material( such lime stone, bricks etc) it is imperative to measure CO<sub>2</sub>% value directly. In such cases calculated value can not be accepted as results as it is not possible to relay on furnmulas due to continuos changes in the process condition.



CO<sub>2</sub>% NDIR module- 63573

# RASI 700

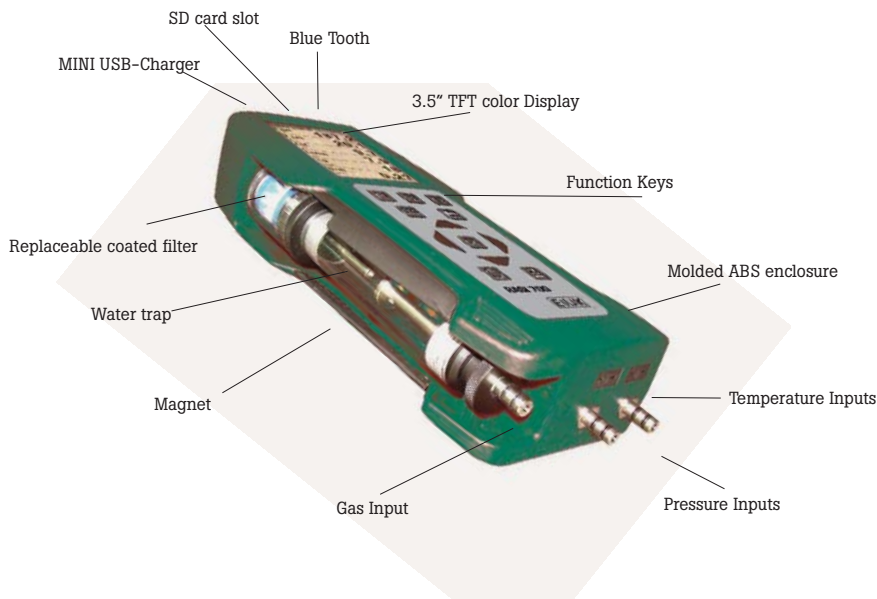
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### Emission/Combustion Analyser



#### Analyser Features

- Engineered to with-stand harsh process conditions
- Robust ABS molded case protect from un-expected drops
  - Stainless steel plugs
  - Integrated removable water trap



#### New water trap offer additional sensor protection



#### Advanced Water trap enhance protection

Each Rasi 200 is fitted as standard witha new integrated condensate trap with PTFE coated filter eliminates the possibility of condensation accumulating inside the unit. The bottom part of the condensate trap is made of alluminium and act as a "natural cooler" to make the sampled gas condensate in the trap- A clean and dry gas is then delivered to the gas collector ready to be measured

An Additional internal filter is installed in the analyser to further prevent the measuring cell from contamination.

#### Intuitive task driven menu and advanced functionality

##### Easy to use task menu

When using RASI700 yo will note the di ference: there is no need to read any heavy manual. This unit is so easy to use. and an additional help menu will help you in case you need it.

- Taks oriented menu with separate pages for different configuration
- Function keys give you direct access to the desired function
- Dedicated measurement programmes can be edited and saved for recall on field
- Separate individual menu for Gas Analysy, temperature and pressure reading
- User configurable disply order

##### Emission Reporting

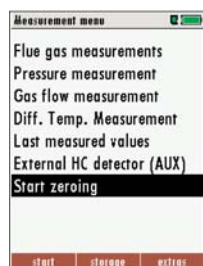
Most of the Enviromantal agencies world-wide require that emssions are reported to specifi standars- RASI 700 features

- Variable O2 Reference user selectable for reporting pourposes
- Emission measurement in mg/m3 or mg/sec as specified in the industry standard
- Low NOx reading to match specific application such as emission monitoring in gas turbine
- Unlimited choice of fuels

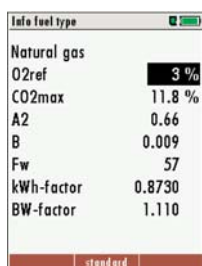
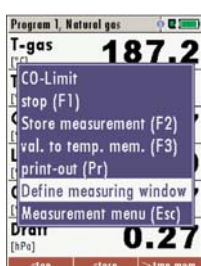
##### Gas and flow Measurement

Rasi 700 measure gas flow velocity and an instant mass when used in conjunction with the Optional Pitot Tube.

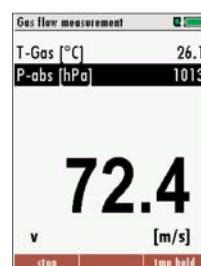
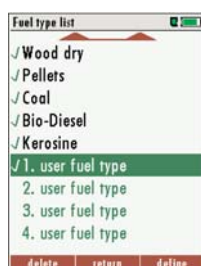
The Gas Flow option include a high accurcay differential internal pressure sensor and a Barometric sensor for automatic compesation of change in ambient pressure



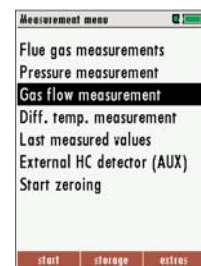
Display Examples



Display Examples



Display Examples



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Specifications				
	Range	Accuracy	resolution	Notes
<b>Measured Gases</b>				
O2 measurement	0 to 25 % Volume Absolute	±0.2 Vol % abs	0.1 % Vol % abs	T90 < 20 ec
CO measurement ( H2 compensated)	0 to 10000 ppm	± 10 ppm or 5 % rdg ( <4000 ppm) 10 % of rdg > 4000 ppm	1 ppm	T90 < 40 ec
Low CO measurement (H2 compensated)	0 to 300 ppm	± 2 ppm or 5 % rdg	0.1 ppm	T90 < 40 ec
CO measurement	0 to 20000 ppm	± 100 ppm or 5 % rdg ( <4000 ppm) 10 % of rdg > 4000 ppm	1 ppm	T90 < 40 ec
CO measurement	0 to 10%	± 0.02 % of 5 % rdg ( <0.4% ppm) 10% of rdg > 0.4 %	1 ppm	T90 < 40 ec
NO measurement	0 to 5000 ppm	± 5 ppm or 5 % rdg ( <1000 ppm) 10 % of rdg > 1000 ppm	1 ppm	T90 < 30 ec
Low NO measurement	0 to 300 ppm	± 2 ppm or 5 % rdg	0.1 ppm	T90 < 30 ec
NO2 measurement	0 to 1000 ppm	± 5 ppm or 5 % rdg ( <200 ppm) 10 % of rdg > 200 ppm	1 ppm	T90 < 60 ec
SO2 measurement	0 to 5000 ppm	± 10 ppm or 5 % rdg ( <2000 ppm) 10 % of rdg > 200 ppm	1 ppm	T90 < 40 ec
H2S measurement	0 to 2500 ppm	± 5 ppm or 5 % rdg ( <100 ppm) 10 % of rdg > 100 ppm	1 ppm	T90 < 40 ec
CO2 % NDIR	0 to 40%	± 0.4 % Abs	0.01 %	T90 < 30 ec
CH4 % NDIR	0 to 100 %	± 0.4 % Abs	0.01%	T90 < 30 ec
<b>Temperature and Pressure</b>				
Temperature measurement	-40 to 1200 Deg	± 1 °C (-40 to 200 °C) ± 1 % of rdg ( 200 to 1200 °C	0.1 °C	n/a
Draft measurement	± 40 hPa	±0.02 hPa or ±1 % of rdg	0.1 hPa	n/a
Pressure measurement ( gauge, negative and differential)	± 300 hPa(mBar)	±0.02 hPa or ±1 % of rdg	0.1 hPa	n/a
Absolute Pressure measurement	0 to 1034 hPa	± 1 % of rdg	0.1 hPa	n/a
<b>Calculated value (Fuel dependant)</b>				
CO2 %	0 to CO2% max	± 0.3 % Vol % abs	0.1 % of Vol	
Heat Losses	0 to 99.9	n/a		
Excess Air	1 to 9.99 %	n/a		
Efficiencies (ETA)	0 to 120 %	n/a	0.1%	
Flue Gas Dew Point	0 to 99.9 °C	n/a	0.1	
<b>Other calculated value</b>				
Flow Mass , Gas Velocity ( require Pitot Tube and Optional Flow velocity integrated module)				
Fuels	Natural GAs, LPG, Heavy/Light Oil, pellets, Bio Diesel , programmable list			
<b>Emission Monitoring/Calculation</b>				
Converted value in mg/Nm3, NOx expressed as mg/m3 in term o NO2 and mg/sec- True NOx measurement (NO+NO2), O2 variable reference , CO/CO2 ratio				
<b>Digital communicatio and data storage</b>				
Digital ouput	Standard MINI USB port- Option BLUEdOOTH module- Real time data transfer			
Memory review	Trough Function key, measurement data are orginised by measurements site- Sites can be created/edited by on board keyboard or directly imported by software.			
Memory Storage	Internal flash memory (up to 250 sites) - SD card more than 1000 sites			
Software	ONLINE VIEW softwar package for real time data transfer, data saving and memory organization.			
<b>Display</b>				
Display Type	3.5" TFT COLOUR backlit display with zoom function			
Display Line	6 Lines for simultaneous disaply 6 parameters simultaneously- User selectable and programmable- up to 4 measurement windows can be preset from keyboard and saved under customised measurement programme			
Display Indication	Display selected masured paramter with unit, measurement programme, fuel in use, charge bar and function menu icon			
<b>Power</b>				
Battery	Internal NiMh rechargeable battery, Optional LI-ION (Litium )high efficiency Battery			
Battery Operating Time	6 hours with standard battery, 15 continous operation with optional Li-Ion			
Battery Charging	Trough USB charging port- Charger included			
AC Operation	110-240 VAC, 50/60 Hz			
<b>Enviromental and mechanical design</b>				
Operating Temperature	- 5 to 45 °C			
Storage Temperature	0 to 50 °C			
IP Protection	IP21			
Weight and Dimensions	750 grams, 110 x 225 x 52 mm (W x H x D)			
Housing	Robust ABS molded case			
Conformity	EN 50379-12			
Warranty	2 years analyser, 1 year O2, CO, NO ,NO2 , SO2 and H2S cell, 2 years CO2% NDIR, 1 year battery/charger and flue gas sampling probe			

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#### Great selection of flu gas samplig probes for every measure

##### Greatest choise of probes

Our rage of probes and sampling line cover every application with an extended temperature range up to 1700 C, different sizes and different lengths. All probes types have interchangeable shaft, positioning cone and measure temperature by using an integrated thermocouple type K. The three path sampling line ensure measurement of the stack pressure, gas and temperature at the same time. A special viton sampling line is used to maximise the accuracy reading when measuring NO2 and SO2 gases.

##### modular sampling probes

To change the probe shaft is simply screwed to the probe handle. Different size, diamter and temperature ranges ensure high flexibility for every application



##### High Temperature probes

A new ceramic probe to with-stand gas sampling in proceess whit temperaturer up to 1700 Deg C.

#### Data Loggin, digital communication and wirless printer

##### Online Data transfer and data storage

Print less, save paper- Save time in generate reporting- Increase personell safety by stay away from the hazardous area.

- View real time data on a Lap top/PDA via standard USB connection or wirelessly via the otional Bluetooth
- 10 meter range
- Store data diretc on a PC or in the OP-tima 7 inetrnal memory and/or SD card for later download
- Save paper and money- check the data before printing
- Remote data transfer increase personell safety and improve productivity

##### Powerful Software

Easy read, edit , manage and file your data using the onlien view software

- Import/Export customer details data base to the analyser
- Download stote data from the Analyser to the PC for reporting generation and data filing
- Real time data transfer via USB or optional Bluetooth
- View in numerical format, barograph, or graphical trend
- Display of Max, Min, AVG values and combustion parameters at a glance
- Quick and easy data transfer into Excel files

##### Fast Infrared printer

Print data on site trough our IRDA interface to our optional fast infrared printer. Try it and you will notice difference. Our new printer is feed free, and is powered via rechargeable batteries. It is much faster compared to the standard HP printers



Blue Tooth 63573



Software 15151



IR Printer 62693

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Analyser	Part number
Rasi 700, equipped with O2 sensor, Integrated rechargeable battery (Ni-HM), USB charger, integrated Temperature and Pressure measurement, Integrated water trap with filter, mini-USB, USB cable, SD card slot, IRDA infrared output, intergated magnet, calibration certificate, instruction manual	410040
Optima 7 can be uquipped with maximum up to 7 cells (including O2). Maxium 6 additional cells can be selected from the table below	
Option: CO (H2) compensated- Range 0 to 10000 ppm	63132
Option:Low CO (H2) compensated- Range 0 to 300 ppm	63133
Option: CO- Range 0-20000 ppm	63057
Option: CO-Range 0 to 10 %	63134
Option:NO- Range 0 to 5000 ppm	63058
Option:Low NO- 0 to 300 ppm	63135
Option:NO2- Range 0-1000 ppm	63059
Option:H2S- Range 0-2500 ppm	63061
Option:SO2- Range 0-5000 ppm	63060
Option:CO2% NDIR- Range 0-40 % Second pump (62727) can not be installed	63573
Option:CO2% NDIR -Range 0-40 % and H2S Range 0-2500 ppm use this option when both H2S and CO2 % NDIR are installed at the same time- When this option is installed, the 62727 second pump can not be installed.	63585
Option:CO2% NDIR -Range 0-40 %, CH4 % NDIR and H2S Range 0-2500 ppm use this option when both H2S and CO2 %/CH4 % NDIR are installed at thesame time- When this option is installed, the 62727 second pump can not be installed.	9999-9999
Option: Additional Purge Pump for installation of Low CO and High CO at the same time (not retrofit)	62727
Option:BLUETOOTH module for wireless data transmission including remote data software (no retrofit)	63064
Option:Universal AUX socket ( Auxiliary Input) for additional external probe connection (no retrofit)	63136
Option: Gas Flow velocity/Mass flow calcolation intregrated module (no retrofit)	63139
Option: SD Card activation reader	63137
<b>Accessories</b>	<b>Part number</b>
Robust ABS carrying case, with customised foam/close cells for analyser, probes and accessory- maximum probe length 500 mm	62931
OnLine Wiew Software package	15151
High Speed Infrared Printer (inlcude 1 paper roll)	62693
Gas Leak detector HC for combustibile gas ( requires AUX socket option)	63086
Spare SD card, 2GB	63137
Shoulder Strap	63218
<b>Pitot Tubes</b>	<b>Part Number</b>
Pitot Tube, 300 mm Long, 6 mm diameter	85120
Pitot Tube, 500 mm long, 6 mm diameter	85130
Pitot Tube, 800 mm long, 8 mm diameter	85132
Pitot Tube, 1000 mm long, 8 mm diameter	85133
<b>Temperature probes</b>	<b>Part Number</b>
Ambient temperature probe for separate Air Temperature measurement ( short type style)	62934
Ambient temperature probe for separate Air Temperature measurement : long 65 mm, 2.7 m cable-	62928
Set of differential temperature probe for T Flow and T return measurement.	9999-9999

Gas Sampling Probes	Part Number
Modular Industrial sampling line with replaceable shaft, available in two different lenght ( 2.7 m and 5 m) sampling special VITON line for optimal NO2/SO2 measurement, integrated thermoelement type K ( NiCr-Ni) for exhaust temperature measurement, continous stack pressure measurement, with quick fit stainless steel connector for Analyser. Please select on or more replaceable shaft :	
2700 mm ( 2.7 m) sampling line lenght	62741
5000 mm ( 5.0 m) sampling line lengt	62747
<b>Replaceable/interchangeable probe shaft available in difference lenghts- include integrated NiCr-Ni *Type K) Thermocouple and positioning cone.</b>	<b>Part Number</b>
Replaceable Shaft, 300 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 850 Deg C	55583
Replaceable Shaft, 500 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 850 Deg C	59292
Replaceable Shaft, 750 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 850 Deg C	55672
Replaceable Shaft, 1000 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 850 Deg C	55673
Replaceable Shaft, 1500 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 850 Deg C	55674
Replaceable Shaft, 2000 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 850 Deg C	55464
Replaceable Shaft, 500 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 1150 Deg C- Material Inconel 600	9999-9999
Replaceable Shaft, 750 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 1150 Deg C- Material Inconel 600	60626
Replaceable Shaft, 1000 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 1150 Deg C- Material Inconel 600	56737
Replaceable Shaft, 1500 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), Tmax 1150 Deg C- Material Inconel 600	56738
<b>Replaceable/interchangeable probe shaft available in difference lenghts- include integrated NiCr-Ni *Type K Thermocouple and positioning cone and sinterised preliminary filter</b>	<b>Part Number</b>
Replaceable Shaft, 750 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), sinterised metal filter, Tmax 500	60813
Replaceable Shaft, 1000 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), sinterised metal filter, Tmax 500	60814
Replaceable Shaft, 1500 mm lenght, including positioning cone and intergrated NiCr-Ni (Type K), sinterised metal filter, Tmax 500	60815
<b>Sampling probe High Temperature</b>	<b>Part Number</b>
Very high temperature probe WITH-OUT temperature measurement, with ceramic replaceable shaft, 1000 mm lenght, Max Temperature 1700 Deg C, with 2.7 m VITON gas sampling line and quick-fit connector to the analyser	63320
<b>Consumable</b>	<b>Part number</b>
Service and claning set	63140
Replaceable filter element	11165
Printer paper roll ( 1 box 5 roll)	59465



**Ribust ABS Case**

Vynil carryig case with vane for analyser, probe, accessoris and document wallet  
Takes probe up 500 mm lenght



**Vinyl Case**

Vynil carryig case with vane for analyser, probe, accessories and document wallet  
Takes probe up 300 mm lenght

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