



INDUSTRIAL EMISSIONS ANALYSERS



Industrial Emissions Analysis Range

Our dedicated team is always on the forefront of designing and manufacturing the most suitable custom instruments to match almost every industrial application.

Standards regulating exhaust gas emissions in industrial systems are also becoming more and more strict, being of great relevance for both climate and health protection.

In high intensity processes, great quantities of toxic gases are produced, such as carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides (NO_x), sulfur dioxide (SO₂) and more.

Often performed in extreme environments, featuring high levels of humidity, high temperatures and presence of particulate matter coming from combustion gases, accurate emissions measurements are needed in order to verify the quality, efficiency and safety of the process.

The analysis are typically performed by special laboratories, maintenance technicians of industrial plants or by the industries themselves.

In order to answer these needs, Seitron has developed a line of industrial emissions analyzers, either portable for periodical measurements or fixed for continuous emissions monitoring.



Applications



Chemical Industries



Boilers



Industrial Burners



Cement



Gas & Diesel Engine



Mining



Laboratories



Biogas Factories

Industrial

Emissions Analyzers Selection Guide



PARAMETERS	S1500-NP	S1500	S4500	S6000
# of gases	2	2	3 or 4	5 or 6
O ₂ Long Life, 0 - 25.0%	✓	✓	✓	✓
CO, 0 - 8,000 ppm	✓	✓	✓	✓
Calculated CO ₂	✓	✓	✓	✓
CO ₂ Sensor for Direct Measurement (0 .. 50%)	-	-	-	✓
Automatic CO Dilution Auto-Range	✓	✓	✓	✓
NO Sensor, 0 - 5,000 ppm	-	-	✓	✓
NO ₂ Sensor, 0 - 1,000 ppm	-	-	Optional	Optional
SO ₂ Sensor, 0 - 5,000 ppm	-	-	Optional	Optional
Low NO, NO ₂ , SO ₂ Sensor, 0 - 100.0 ppm	-	-	Optional	Optional
CxHy (HC) Pellistor, 0 - 5% vol CH ₄	-	-	Optional	Optional
H ₂ S Sensor (standard or low range)	-	-	-	Optional
H ₂ Sensor, 0 - 2,000 ppm	-	-	-	Optional
NH ₃ Sensor, 0 - 500.0 ppm	-	-	-	Optional
CH ₄ NDIR Sensor, 0 - 100% v/v	-	-	-	Optional

FEATURES

BUILT-IN Printer (NON-FADING PAPER)	-	✓	✓	✓
Wireless Bluetooth Printer	Optional	-	-	-
FIELD-REPLACEABLE Pre-Calibrated Sensors	✓	✓	✓	✓
Reporting & Storage Software with Bluetooth	✓	✓	✓	✓
Real-Time Software & Data Logging	-	-	-	-
Internal Memory	2,000 Tests	2,000 Tests	2,000 Tests	2,000 Tests
Automatic Data Logging	✓	✓	✓	✓
External Cooler	-	-	-	Optional
Draft / Differential Pressure	✓	✓	✓	✓
Gas Velocity	✓	✓	✓	✓



PARAMETERS	S9000	S9000-RACK
# of gases	up to 12	up to 6
Heated Hose & Probe Head	Optional	Optional
Continuous 24/7 Measurement	-	✓
O ₂ Long Life, 0 - 25.0%	✓	✓
CO, 0 - 8,000 ppm	✓	✓
Calculated CO ₂	-	-
CO ₂ Sensor for Direct Measurement (0 .. 50%)	Optional	Optional
Automatic CO Dilution Auto-Range	✓	✓
NO Sensor, 0 - 5,000 ppm	✓	✓
NO ₂ Sensor, 0 - 1,000 ppm	Optional	Optional
SO ₂ Sensor, 0 - 5,000 ppm	Optional	Optional
Low NO _x / SO ₂ Sensor, 0 - 500.0 ppm	Optional	Optional
CxHy (HC) Pellistor, 0 - 5% vol CH ₄	Optional	Optional
H ₂ S Sensor (standard or low range)	Optional	Optional
H ₂ Sensor, 0 - 2,000 ppm	Optional	Optional
NH ₃ Sensor, 0 - 500.0 ppm	Optional	Optional
NDIR Bench configured for one or more gases of the following: CO ₂ (0 - 50%), CO (0 - 15%) & HC (calibrated for CH ₄ or C ₃ H ₈)	Optional	Optional

FEATURES

Calculated CO ₂ , Efficiency, & Excess Air	✓	✓
BUILT-IN Printer (NON-FADING PAPER)	✓	-
Wireless Bluetooth Printer	-	Optional
FIELD-REPLACEABLE Pre-Calibrated Sensors	✓	✓
Reporting & Storage Software with Bluetooth	✓	✓
Real-Time Software & Data Logging	✓	✓
Internal Memory	16,000 Tests	Data saved via Modbus® on PC
Automatic Data Logging	✓	✓
Built-In Thermo-Electric Peltier Chiller	Optional	✓
Draft / Differential Pressure	✓	✓
Gas Velocity	✓	✓



S1500-P

ALL IN ONE COMBUSTION ANALYZER

Fast / Easy / Robust / Accurate

- Built In Printer
- O₂, CO, CO₂
- 15 Preprogrammed fuels (including #2 Oil, #4 Oil, #6 Oil, Natural gas, Propane, Biofuel, Wood, more)
- Full color display
- Smartphone Real Time + QRcode App (iOS, Android)
- Built in Pressure Manometer
- Draft/Pressure included
- CO Air free
- Dilution pump for CO Auto range up to 100,000 ppm
- Ambient CO monitoring
- CO Sensor protection
- Cracked Heat Exchanger Test
- PC Software Included
- High Altitude adjustment



Built-in Printer



Field Replaceable Sensors



O₂, CO, CO₂ Gas Sensors



Full color Graphic Display



Mobile App - iOS, Android



For all High Efficiency Condensing Systems



Seitron Smart Analysis



Windows Software
Seitron Smart Analysis



Features

- Combustion Efficiency, Losses, Excess Air
- CO sensor protection
- Draft & Differential Pressure
- Temperature Measurements
- Large Color Display
- 2000 Test Internal Memory
- Bluetooth Connectivity
- Long Lasting Rechargeable Battery & AC Charger
- Gas Sampling Probe & Hose

MEASUREMENT	SENSOR	RANGE	RESOLUTION	ACCURACY	
O ₂ Long life	Electrochemical	0 .. 25.0% vol	0.1% vol	±0.2% vol	
CO sensor with Over Range protection (NOx filter)	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value	0 .. 40.0 ppm 40.1 .. 500.0 ppm
		501 .. 8000 ppm	1 ppm	±5% measured value ±10% measured value	501 .. 2000 ppm 2001 .. 8000 ppm
CO ₂	Calculated	0 .. 99.9% vol	0.1% vol		
Air Temperature	TcK sensor	-4 .. 2282 °F (-20.0 .. 120.0 °C)	32.18 °F 32.2°F (0.1 °C)	-31 .. +33 °F (±0.5°C) ±0.5%	32 .. 212 °F (0 .. 100 °C) 214 .. 2282 °F (101 .. 1250°C)
Stack Temperature	TcK sensor	-4 .. 2282 °F (-20.0 .. 120.0 °C)	32.18 °F 32.2°F (0.1 °C)	-31 .. +33 °F (±0.5°C) ±0.5%	32 .. 212 °F (0 .. 100 °C) 214 .. 2282 °F (101 .. 1250°C)
Pressure (draft & differential)	Piezo Resistive	-40.1 .. +80.4 inH ₂ O	0.004 inH ₂ O	±1% measured value ±0.08 inH ₂ O ±1% measured value	-40.1 .. -0.81 inH ₂ O -0.80 .. +0.80 inH ₂ O +0.81 .. +80.4 inH ₂ O
Differential Temperature	Calculated	32 .. 2282°F (0 .. 1250.0 °C)	32.2°F (0.1 °C)		
Air Index	Calculated	0.00 .. 9.50	0.01		
Excess Air	Calculated	0 .. 850 %	1%		
Stack losses	Calculated	0.0 .. 100.0 %	0.1 %		
Efficiency	Calculated	0.0 .. 100.0 %	0.1 %		
Warranty	4 years on Sensors and 2 years on Analyzer				

S1500-P Kits Include:

- O₂, CO, CO₂
- 12" (300mm) probe
- 1112 °F (600 °C) max
- 5' (1.5m) Dual Hose
- Dual Tck for condensing systems
- Dual pressure manometer
- Longer & High Temperature Probes available
- Cracked Heat Exchanger Test Included
- Plug and Play Pre-Calibrated Field Replaceable Sensors
- 32 Programmed Fuels & Oils (Including Bio-Fuel)
- Metal Connection
- Hard carrying case
- Magnetic rubber holster
- Operation manual
- Calibration certificate
- Li-Ion Battery
- AC Charger
- AACKP02 Pressure Hoses



Pressure Hoses

Model	Description
S1500-P	All In One Kit= Analyzer w/ O ₂ , CO, CO ₂ , Efficiency, Excess Air, Draft, Pressure, Temp, Rechargeable Battery & AC Plug, 12" (300mm) Probe with 5' (1.5m) Dual hose, ABS Case, Calibration Certificate, Operating Manual, Cheat Sheet, Water Trap, Paper Roll, 2000 Internal Data Storage, PC Software, Bluetooth TM Connectivity, Differential Pressure Manometer Kit (1 Hose), Automatic Outdoor Air Temperature Saving for ALL 90%+ Systems & Condensing Systems for TRUE Efficiency Calculations + iOS and Android App Included
S1500-P-OIL	Standard S1500-P Kit plus Oil smoke pump, smoke filters and comparison chart



S4500

COMMERCIAL / INDUSTRIAL EMISSIONS ANALYZER

Fast / Easy / Robust / Accurate

- Built In Printer
- up to 4 gas (O₂, CO, NO, NO₂, CO₂, SO₂, CxHy (HC))
- Low NOx Available
- Total NOx Available (NO+NO₂)
- Automatic data logging
- Dilution pump for CO Auto range up to 100,000 ppm
- Smartphone Real Time + QRcode App (iOS, Android)
- Built in Pressure Manometer
- Draft & Differential Pressure
- PC Software Included
- High Altitude adjustment



Built-in Printer



Field Replaceable Sensors



O₂ , CO , CO₂ , NO, NO₂, SO₂, CxHy (HC)
Gas Sensors



Full color Graphic Display



Mobile App - iOS, Android



Seitron Smart Analysis



Windows Software
Seitron Smart Analysis



Features

- Combustion Efficiency, Losses, Excess Air
- CO sensor protection
- Draft & Differential Pressure
- Temperature Measurements
- Large Color Display
- 2000 Test Internal Memory
- Bluetooth Connectivity
- Long Lasting Rechargeable Battery & AC Charger
- Gas Sampling Probe & Hose

INDUSTRIAL EMISSIONS ANALYZERS

MEASUREMENT	SENSOR	RANGE	RESOLUTION	ACCURACY
O ₂ Long life	Electrochemical	0 .. 25.0% vol	0.1% vol	±0.2% vol
CO sensor w/ Over Range protection NOx filter	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value
		501 .. 8000 ppm	1 ppm	±5% measured value ±10% measured value
CO ₂	Calculated	0 .. 99.9% vol	0.1% vol	-
Low NO Standard NO	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value
		501 .. 5000 ppm	1 ppm	±5% measured value
Low NO ₂ Standard NO ₂	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value
		501 .. 1000 ppm	1 ppm	±5% measured value
Low SO ₂ Standard SO ₂	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value
		501 .. 5000 ppm	1 ppm	±5% measured value
NOx	Calculated	-	-	-
CxHy (HC)	Pellistor	0 .. 5%	0.01 %	±5% full scale
Air Temperature	Pt100	- 4 to 248 °F - 20 to 120 °C	33.8 °F 32.2°F (0.1 °C)	33.8 °F 32.2°F (0.1 °C)
Gas Temperature	TcK	- 4 to 2280 °F - 20 to 1250 °C	33.8 °F 32.2°F (0.1 °C)	33.8 °F 32.2°F (0.1 °C)
Differential temperature	Calculated	- 4 to 2280 °F - 20 to 1250 °C	32.2°F (0.1 °C)	-
Pressure/Draft	Piezo Resistive	-40.1 .. +80.4 inH ₂ O	0.004 inH ₂ O	±1% measured value ±0.08 inH ₂ O ±1% measured value
Excess air	Calculated	0 .. 850%	1%	-
Efficiency	Calculated	0 .. 100%	0.1%	-
Warranty	4 years on Sensors and 2 years on Analyzer			



Standard Probe Detail:

- 12" (300mm) probe
- 1112 °F (600 °C) max
- 10' (3m) Dual Hose

Long Probe Detail:

- 30" (750mm) probe
- 1472 °F (800 °C) max
- 10' (3m) Dual Hose

Long & High Temp Probe Detail:

- 40" (1m) Probe or 60" (1.5m) probe
- 2192 °F (1200 °C) max
- 10' (3m) Hose

Hose Extention:

- 10' (3m) Length Available

Model	Description
S4500-2	S4500 with O ₂ , Low CO Gas Sensors, Upgradable to NO/NOx Gas Sensor
S4500-3	S4500 with O ₂ , CO, Standard NO/NOx Gas Sensors, Upgradable to 4th Gas Sensor
S4500-3-Low	S4500 with O ₂ , Low CO, Low NO/NOx Gas Sensors, Upgradable to 4th Gas Sensor
S4500-N	S4500 with O ₂ , CO, Standard NO/NOx, Standard NO ₂ Gas Sensors
S4500-N-Low	S4500 with O ₂ , Low CO, Low NO/NOx, Low NO ₂ Gas Sensors
S4500-S	S4500 with O ₂ , CO, NO/NOx, SO ₂ Gas Sensors
S4500-S-Low	S4500 with O ₂ , Low CO, Low NO/NOx, Low SO ₂ Gas Sensors
S4500-C	S4500 with O ₂ , CO, Standard NO/NOx, CxHy Gas Sensors
S4500-C Low	S4500 with O ₂ , Low CO, Low NO/NOx, CxHy Gas Sensors



S6000

INDUSTRIAL / COMMERCIAL EMISSIONS ANALYZER

Fast / Easy / Robust / Accurate

- Built In Printer
- Up to 6 gas (O₂, CO, NO, NH₃, NO₂, CO₂, SO₂, CxHy (HC), H₂, H₂S, CH₄)
- Low NOx & Low SOx Capable
- True NOx (Low NO+NO₂) Available
- Automatic data logging
- NOx & SOx in one Instrument
- Dilution pump for CO Auto range up to 100,000 ppm
- Smartphone Real Time + QRcode App (iOS, Android)
- Built in Manometer
- Draft/Pressure included
- PC Software Included
- New Ammonia Measurement



Seitron Smart Analysis



Windows Software Seitron Smart Analysis



Features

- Draft & Differential Pressure
- Temperature Measurements
- Large Color Display
- 2000 Test Internal Memory
- Bluetooth Connectivity
- Long Lasting Rechargeable Battery & AC Charger
- Gas Sampling Probe & Hose
- Gas velocity w/optional Pitot tube
- Longer probes: extension hoses available

Built-in Printer



Field Replaceable Sensors



Up to 6 Gas Sensors



Full Color Graphic Display



Mobile App - iOS, Android



INDUSTRIAL EMISSIONS ANALYZERS

MEASUREMENT	SENSOR	RANGE	RESOLUTION	ACCURACY
O ₂ Long life	Electrochemical	0 .. 25.0% vol	0.1% vol	±0.2% vol
CO sensor w/ Over Range protection NOx filter	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value 0 .. 40.0 ppm 40.1 .. 500.0 ppm
		501 .. 8000 ppm	1 ppm	±5% measured value ±10% measured value 501 .. 2000 ppm 2001 .. 8000 ppm
CO ₂	Calculated	0 .. 99.9% vol	0.1% vol	-
Low NO Standard NO	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value 0 .. 40.0 ppm 40.1 .. 500.0 ppm
		501 .. 5000 ppm	1 ppm	±5% measured value 501 .. 5000 ppm
Low NO ₂ Standard NO ₂	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value 0 .. 40.0 ppm 40.1 .. 500.0 ppm
		501 .. 1000 ppm	1 ppm	±5% measured value 501 .. 1000 ppm
Low SO ₂ Standard SO ₂	Electrochemical	0 .. 500 ppm	0.1ppm	±2 ppm ±5% measured value 0 .. 40.0 ppm 40.1 .. 500.0 ppm
		501 .. 5000 ppm	1 ppm	±5% measured value 501 .. 5000 ppm
NOx	Calculated	-	-	-
NH ₃	Electrochemical	0 .. 500.0 ppm	0.1 ppm	±10 ppm ±10% 0 .. 100.0 ppm 100.1 .. 500.0 ppm
CxHy (HC)	Pellistor	0 .. 5%	0.01 %	±5% full scale
Air Temperature	Pt100	- 4 to 248 °F - 20 to 120 °C	33.8 °F 32.2°F (0.1 °C)	33.8 °F 32.2°F (0.1 °C)
Gas Temperature	TcK	- 4 to 2280 °F - 20 to 1250 °C	33.8 °F 32.2°F (0.1 °C)	33.8 °F 32.2°F (0.1 °C)
Differential temperature	Calculated	- 4 to 2280 °F - 20 to 1250 °C	32.2°F (0.1 °C)	-
Pressure/Draft	Piezo Resistive	-40.1 .. +80.4 inH ₂ O	0.004 inH ₂ O	±1% measured value ±0.08 inH ₂ O -40.1 .. -0.81 inH ₂ O -0.80 .. +0.80 inH ₂ O ±1% measured value +0.81 .. +80.4 inH ₂ O
Excess air	Calculated	0 .. 850%	1%	-
Efficiency	Calculated	0 .. 100%	0.1%	-
Warranty	2 years on Sensors and 2 years on Analyzer			



Standard Probe Detail:

- 12" (300mm) probe
- 1112 °F (600 °C) max
- 10' (3m) Dual Hose

Long Probe Detail:

- 30" (750mm) probe
- 1472 °F (800 °C) max
- 10' (3m) Dual Hose

Extra Long & High Temp Probe Detail:

- 40" (1m) Probe or 60" (1.5m) probe
- 2192 °F (1200 °C) max
- 10' (3m) Hose

Hose Extension:

- 10' (3m) Length Available

SOFTWARE Windows



- Remote display of real-time analysis from the portable analyzer and data saving
- Display and/or export and stored data
- Analyzer configuration

Model	Description
E6000-5DS	O ₂ , CO, NO/NO _x , NO ₂ & SO ₂ Gas Sensors
E6000-5DC	O ₂ , CO, NO/NO _x , NO ₂ & CxHy/HC Gas Sensors
E6000-5SC	O ₂ , CO, NO/NO _x , SO ₂ & CxHy/HC Gas Sensors
E6000-5SH	O ₂ , CO, NO/NO _x , SO ₂ & H ₂ S Gas Sensors
E6000-6DSC	O ₂ , CO, NO/NO _x , NO ₂ , SO ₂ & CxHy/HC Gas Sensors
E6000-6DSH	O ₂ , CO, NO/NO _x , NO ₂ , SO ₂ & H ₂ S Gas Sensors

(*) All models above are available also with: Low NO, Low NO₂, Low SO₂ - (**) Ammonia (NH₃) Available upon request on any Model

S9000 TRANSPORTABLE EMISSIONS ANALYZER

UP TO 12 GAS SENSORS

The S9000 is a high-end industrial emissions analyzer, mainly used for industrial burners, cogeneration, gas turbines, industrial ovens and processes, laboratories and generally everywhere the need is to measure and register for long periods the gas emissions, in compliance with existing EPA protocols and Regulations. It can be configured with Built in Chiller and Probe with heated head.



Seitron Smart Analysis

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Google Play

Download on the
App Store

EXPLORE IT ON
AppGallery



Bluetooth® Included

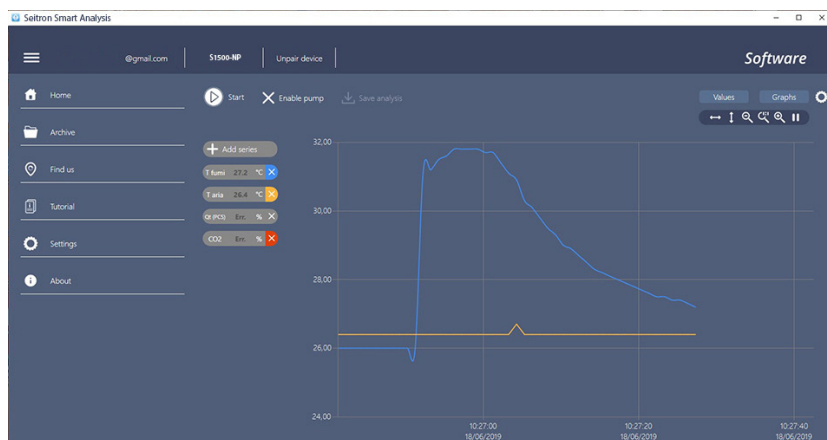


MAIN FEATURES

- Ability to simultaneously measure up to 12 different gases, with up to 9 single gas measuring sensors and one infrared bench (NDIR) for High CO, Direct CO₂ & Hydrocarbons (HC)
- Measurable gases: O₂, CO, CO₂, C_xH_y, NO, NO₂, SO₂, H₂S, H₂, NH₃ with different ranges and accuracies
- Heated probe and head available
- Standard fuels in memory: methane, LPG, propane, butane, light oil, heavy oil, biogas, wood, pellets, coal. Up to 16 additional fuels can be added by the user
- Pump for gas sample and 2nd dilution pump for CO cell protection
- Withstand very high stack temperatures
- Positive, negative and Pressure Differential measurement
- Gas sampling probes of different type and length / heated head and hose probe
- Double particulate filter system
- Standard expansion water trap or Peltier quick Cooler
- Automatic condensate drainage with peristaltic pump
- Memory up to 16,000 complete analysis
- USB output for PC connection
- Bluetooth® Class 1
- Power supply from Lithium Ions Batteries or mains 90...260 Vac
- AC Charger / power supply inside the instrument.
- Datalogger function
- Industrial Grade Metal Case
- Real-time data logging PC Software included
- Built-in printer



Windows Software
Seitron Smart Analysis



- Remote display of real-time analysis from the portable analyzer and data saving
- Display and/or export and stored data
- Analyzer configuration

Composition: central unit and gas sampling system

The **S9000** industrial analyzer is made up of two parts:

- the central unit includes flex gas sensors (max 9) and CO₂/CO/CxHy (NDIR bench) optional
- the gas sampling system

Standard packing includes:

- O₂ (0-25%), CO (0-8000ppm), & NO/NO_x (0-5000ppm) Gas Sensors
- CO Dilution Auto-Range up to 10%
- Stack Gas & Ambient Air Temperature Measurements
- Draft & Differential Pressure Measurements
- Efficiency, Loss, Excess Air, & CO₂ Calculations
- 12" (300mm) Probe, 1470F (800C) max, with 10' (3m) Dual Hose (*)
- Built-In Thermoelectric Chiller with Automatic Condensate Removal
- Rechargeable Battery Pack with AC Charger
- Large Full Color Graphic Display Screen
- Built-In Printer (Non-Fading Paper)
- Internal Memory for Data Storage (16,000 Tests)
- PC Software Package with BlueTooth Adapter & USB Cable
- Wireless BlueTooth Communications
- Transportable Heavy Duty Aluminum Carrying Case
- Ability to upgrade up to 9 electrochemical gas sensors
- Ability to upgrade up to 3 NDIR gases (NDIR bench)
- Instruction Manual
- Calibration Certificate

(*) Longer / High Temperature Probes Available

GAS SAMPLING SYSTEMS

- Passive Type: utilizes probes with different tip lengths and fittings, made of different materials, with a flexible tube connection to the central unit in various lengths.
- Active Type: utilizes gas sampling probe with heated head and flexible heated tube. This feature prevents water vapor and condensation from reaching the central unit, which can affect the measurements of gases that are easily soluble in water, such as NO₂ and SO₂. The active sensor maintains the gas sample at a higher temperature than the dew point and keeps it stable as far as the cooling system: this is a fast, cyclone type with Peltier cell. The water vapor condenses so quickly that the NO₂ and SO₂ gases do not have time to dissolve in water, resulting in the most accurate measurements possible especially with Low NO_x and Low SO₂.



Active gas sampling probe
with heated head and hose

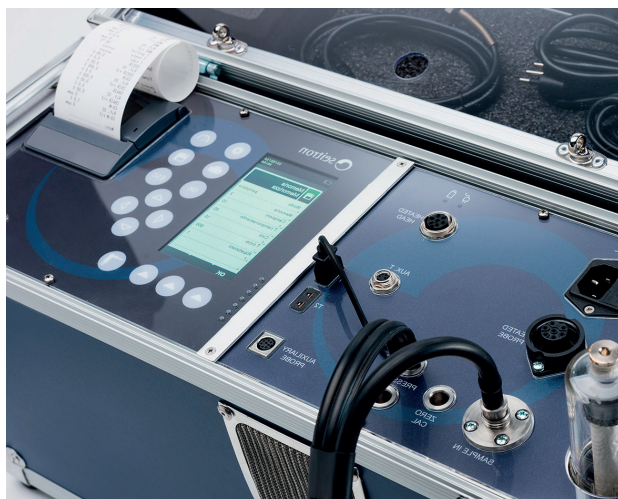
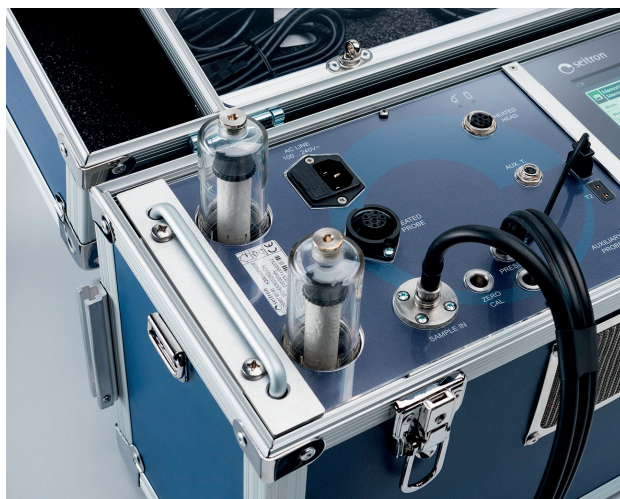


Passive gas sampling probe



30" (750mm) gas sampling
probe for industrial motors

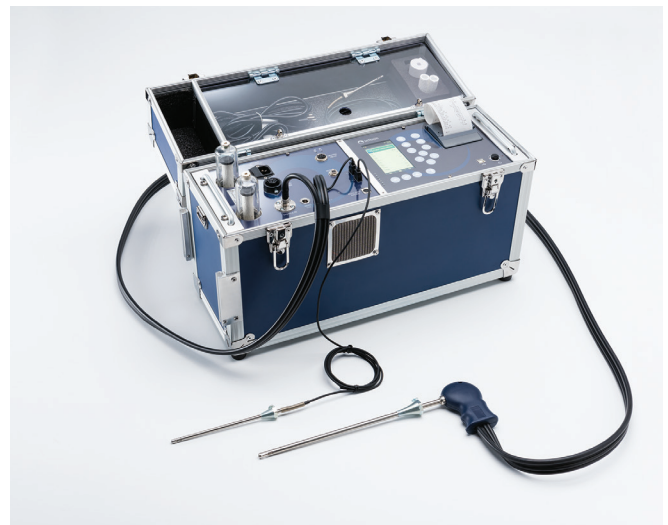
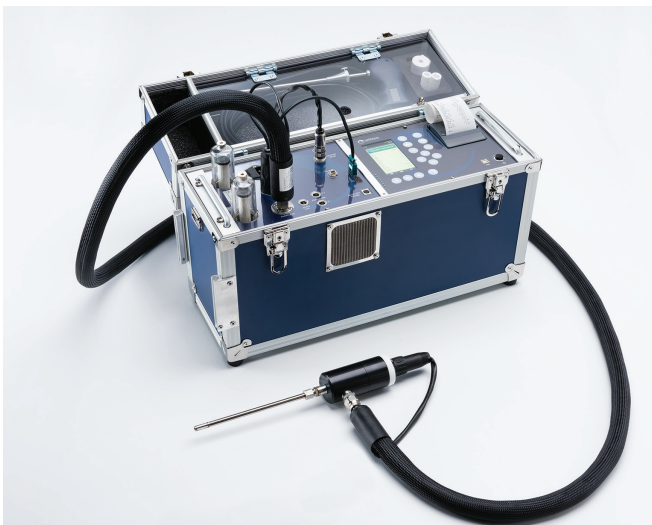
S9000 - Details & Applications



S9000 - TECHNICAL FEATURES

Power supply: Battery charge: Charging time: Instrument battery life:	100 .. 260V~ or Li-ion battery pack with internal protection circuit, rechargeable. With mains cable with IEC C14 socket. 8 hours from 0% to 90%. 10 hours of continuous operation (except printer and Peltier Chiller). 2 hours with Cooler running.
Display:	Backlit TFT graphical colour display. 4.3" 480×272 pixel.
Connectivity Communication port: Bluetooth:	TYPE B USB connector. Communication distance: <100 metres (open field).
Autozero: Dilution:	Automatic autozero cycle with gas sampling probe in stack. CO sensor measurement range expansion system up to 100,000ppm (10.00%). Starting point programmable by the user.
Gas measurement sensors:	Up to 9, configurable among electrochemical, NDIR (single cell) and Pellistor.
Infrared bench: Fuel type:	3 gases NDIR bench: CO, CO ₂ , CxHy. 12 preprogrammed and 16 additional programmable by the user.
Self diagnostics: Temperature measurement: Ambient temperature measurement:	Check all functions and internal sensors with status indication. TcK double input with mini connector (ASTM E 1684-96) for Temperature Differential measurement (supply and return). Via internal sensor or via T2 TcK input with remote sensor.
Printer: Printer power supply: Printer battery life:	Integrated, thermal, with easy paper loading and paper level indicator. Analyzer batteries. With fully charged batteries up to 40 analysis reports.
Internal Data Memory: User data: Printer header:	16,000 complete data analysis, time and customer's name can be stored. 8 programmable user names. 6 lines × 24 characters, user customisable.
In-line filter:	With replaceable cartridge, 99% efficiency with 20µm particles.
Vacuum pump: Capacity pump:	2.0 l/min flow rate in the stack up to 120inH ₂ O (300hPa) head. Internal sensor measuring pump flow rate.
Cooler sample treatment Drying system: Type: Set point temperature cooler: Max. temp. deviation from set point: Condensate emptying pump: Peristaltic duty cycle pump: Warm-up time: Operating temperature: Anti-condensation trap Type: Condensate emptying pump: Operating temperature:	Rapid water condensation using cyclone system Peltier cell +41°F (+5°C) +50°F (+10°C) from set point Peristaltic hose 38 ml/min 30s On .. 30s Off ~ 15 .. 20 minutes +23°F (-5°C) .. +113°F (+45°C) Integrated Peristaltic hose 38 ml/min +23°F (-5°C) .. +113°F (+45°C)

Condensing boiler efficiency :	Automatic assessment of the condensing boiler, with calculation and printing of the boiler efficiency.
Ambient gases:	Separate measurement and printing of the ambient CO concentration.
Draft test:	Draft test execution using external probe (AACDP02)
Working temperature:	+23°F (-5°C) .. 113°F (+45°C)
Storage temperature:	-4°F (-20°C) .. 122°F (+50°C)
Humidity limit:	20% .. 80% RH
Protection level:	IP21
External dimensions:	20" x 14" x 8" (50 x 36 x 20 cm) (W x H x D). 20" x 18" x 5" (50 x 46 x 13 cm) (W x H x D) with intermediate drawer for heated head and sensor transportation.
Weight:	~ 26.5 lb (12kg) (Typical configuration: nine sensors - Cooler - IR bench - smoke sampling sensor - power cable - USB cable - carrying strap - two paper rolls - USB stick - condensate drain tube - remote air intake tube - combustive air sensor). ~ 28.6 lb (13kg) (Typical configuration with additional accessories such as: 3m extension for smoke sensor - auxiliary air sensor - 12" (300mm) Pitot Tube - draught gauge). ~ 36.8 lb (16.7kg) (Typical configuration with additional accessories and intermediate drawer containing: heated head sensor with 12" (300mm) tip and heated tube).
List of Gas option:	<ul style="list-style-type: none"> • O2 • CO • NO • NO2 • SO2 • CxHy • H2 • H2S • NH3 • CO2 • HC referred to CH4 or C3H3



S9000-RACK up to 6 gas sensors

CONTINUOUS EMISSIONS GAS ANALYZER

The S9000-RACK is a high end, continuous industrial emissions analyzer. This unique device can measure emissions generated by numerous industrial combustion processes and it analyzes different gases thanks to its NDIR and electrochemical technology.

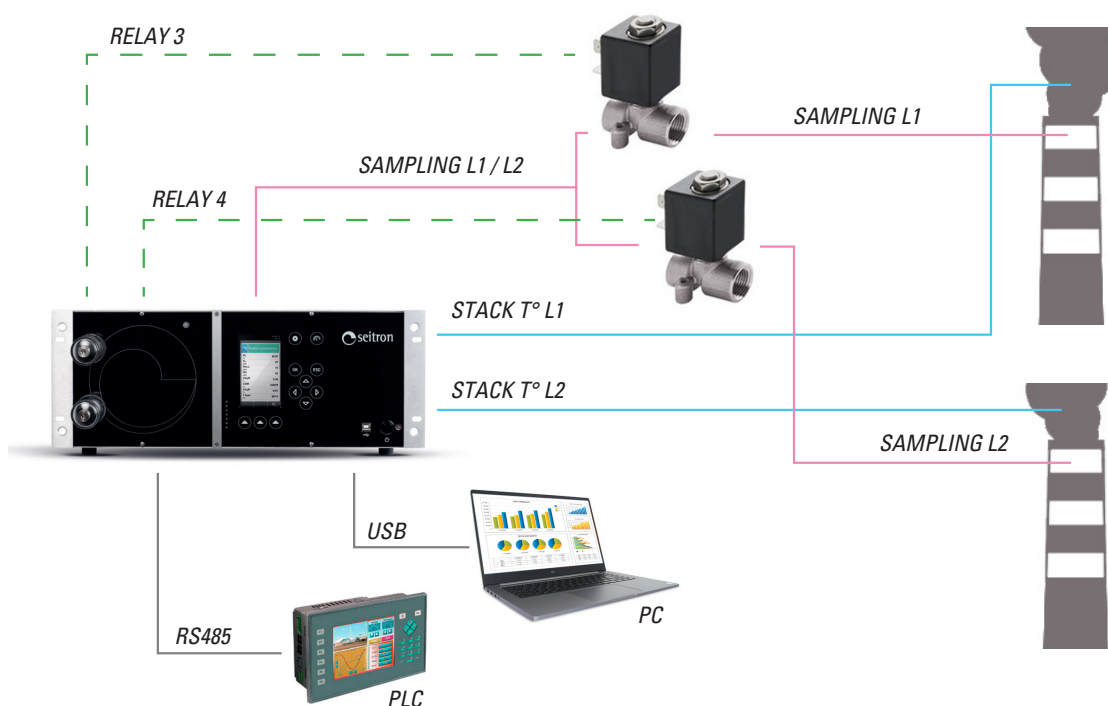
Combustion and emissions parameters are displayed in real time on the unit's color display, along with PC Software or on a PLC that receives data via RS485 serial connection. The sensors are thermally compensated in order to avoid measurement errors that could be caused by temporary thermal variation. The distinctive feature of the S9000-RACK is its rack structure that allows the use in a standard 19" cabinet or even in laboratories because it comes standard equipped with 4 rubber bumpers as standard. The S9000-RACK is designed to perform continuous analysis thanks to an automatic commutation system that allows to reset both the gas sensors and pressure sensors. This, together with an optional Pitot tube, allows for measurement of gas velocity inside the stack. An important feature of the S9000-RACK is the internal cooling system that causes a quick condensation of the moisture contained in the gas thus allowing the gas to reach the sensors without dissolving in water. The gases that benefit from this system are NO₂, SO₂, NH₃, H₂S.

Condensation is collected into a water tank and emptied on automatic timed basis by a membrane pump. The gas sample and the air are filtered by two interchangeable particulate filters. The S9000-RACK is equipped with a system that allows measurement of gases from two different points (e.g. two stacks) and carry them into a single suction line (image 1).

All measured parameters and collected data are sent via serial communication (RS485) and USB communication port in order to connect to the PC for the analysis reading.

The user can archive and analyze the collected data with the included dedicated software platform, Seitron Smart Analysis.

SAMPLING LINE SELECTION SYSTEM

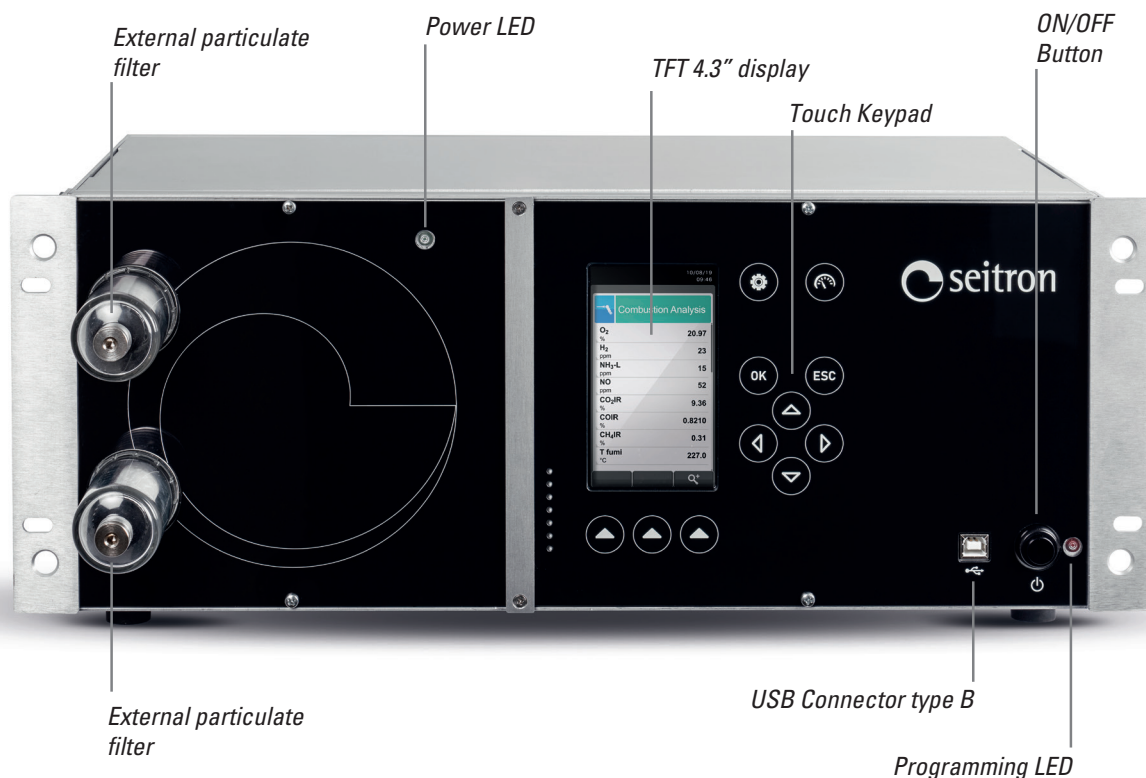


MAIN FUNCTIONS

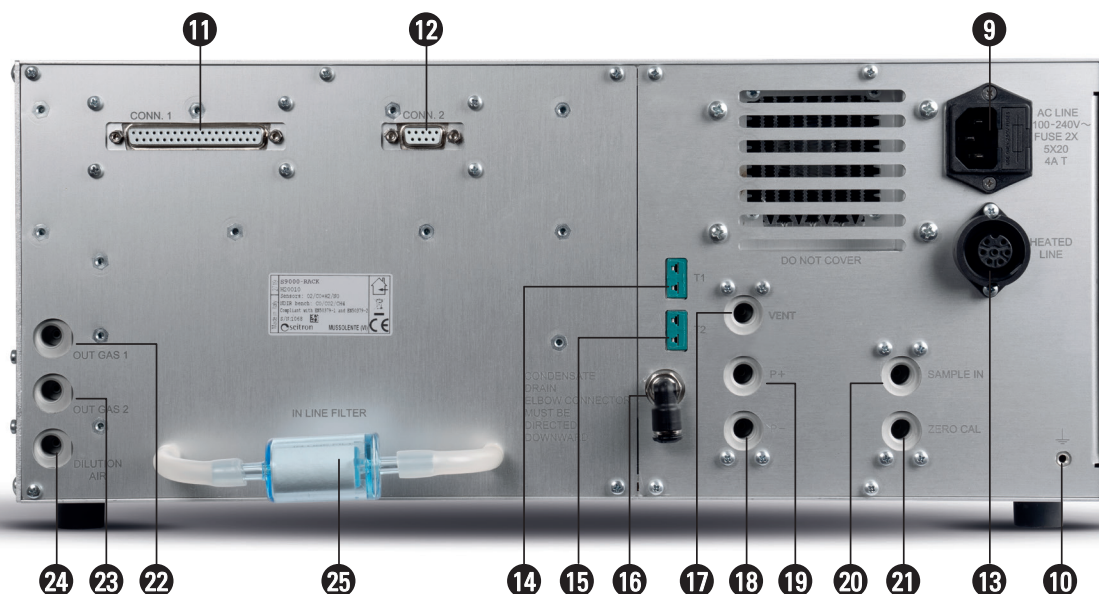
- Serial communication port type RS485 according to protocol MODBUS® RTU USB Communication
- 4 .. 20 mA isolated output
- Output signal: from 4 to 20mA scalable up to 10% of the measurement range of the chosen sensor. Other calibrations beyond this limit on request
- 4 alarm relays outputs
- Heated probes available up to 20 ft (6m) connection
- Efficiency calculations
- Condensing efficiency calculation
- PCI efficiency calculation
- PCS efficiency calculation
- 15 default fuels
- 32 programmable fuels
- CO sensor protected by an automatic dilution system

MEASUREMENT

- up to 6 gas sensors in total
- NDIR bench (measuring up to 3 gases)
- Electrochemical gas measurement sensors (up to 3)
- Stack temperature measurement (2 temperatures)
- Ambient or Primary Air Source Temperature
- Thermal Compensation
- Draft in the stack with automatic autozero
- Measurement of the differential pressure
- Stack Air Velocity measurement with the use of Pitot tube
- Suction pump flow rate measurement



BACK COVER DESCRIPTION



9. Power Supply 'AC LINE - 90 .. 264V-'

Plug IEC C14 to connect the power cable to the instrument, provided with the instrument itself. On the plug there is a fuse-holder hidden under a flap, containing 2 fuses 5x20 4A T.

10. Connection for grounding of the instrument.

11. 37 poles connector (4 outputs 4..20mA and 4 relay outputs)

Makes available for the user 4 4..20mA outputs and 4 relay outputs with potential free change over.

12. Serial connector RS485

Serial communication port type RS485 according to MODBUS® RTU protocol.

13. 'HEATED LINE' Connector

Plug for the heated line connection.

14. 'T1' Connector

Tc-K connector to plug in the male connector Tc-K of the probe for the measure of the smoke temperature.

15. 'T2' Connector

Tc-K connector to plug in the male connector Tc-K of the combustion air probe.

16. Condensation water drain

17. 'VENT' Connector - Female connector M5

Air vent used by the pressure sensor to perform the self-zeroing. If the instrument is installed on a rack or in pressurized environments, the air vent must be moved remotely at room temperature.

18. Pneumatic connector 'P-' - female connection 1/8 GAS BSPP.

Negative input (P-) to be used for the draft measurement.

19. Pneumatic connector 'P+' - female connection 1/8 GAS BSPP.

Positive input (P+) to be used for the measurement of the pressure in general.

20. Pneumatic connector 'SAMPLE IN' - female connection 1/8 GAS BSPP.

Input for the connection of the gas sampling probe.

21. Pneumatic connector 'ZERO CAL' - female connection 1/8 GAS BSPP.

Input for the line connection to the remote air vent in order to perform the self-zeroing. If the instrument is placed in a closed and polluted environment, it is possible to move the instrument air vent in a room with clean air using the 'ZERO CAL' connector

22. Connector 'OUT GAS 1' - female connection 1/8 GAS BSPP.

Analyzed gas remote output.

23. Connector 'OUT GAS 2' - female connection 1/8 GAS BSPP.

Analyzed gas remote output.

24. Connector 'DILUTION AIR' - female connection 1/8 GAS BSPP.

Remote air vent for CO dilution.

25. Particulate filter for NDIR (infrared) bench protection

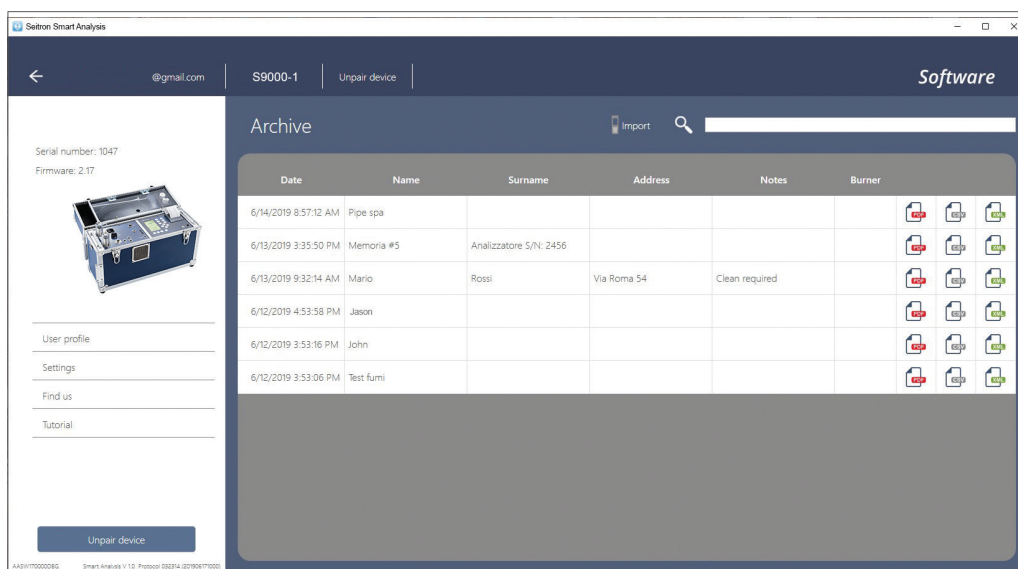
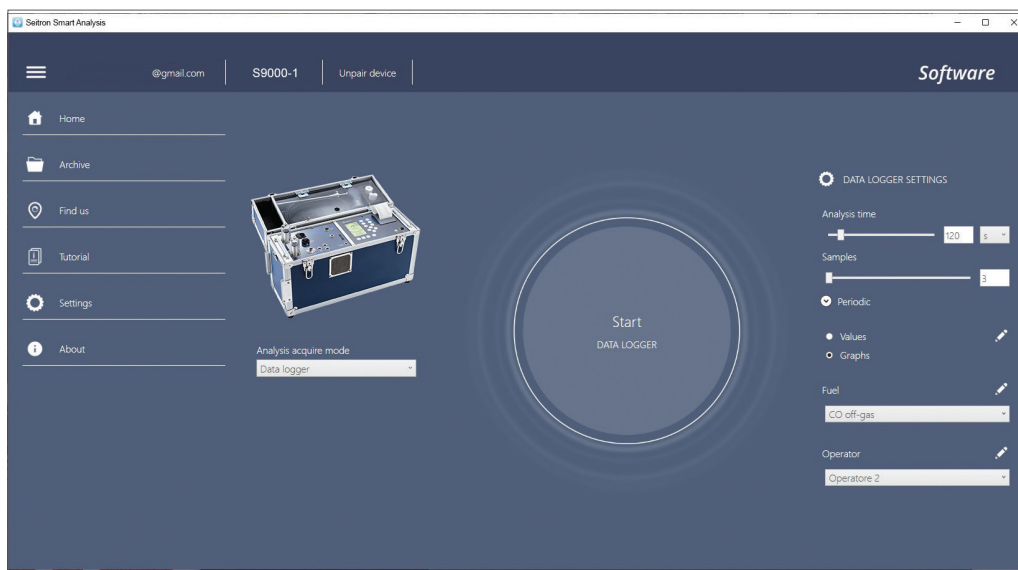
Seitron Smart Analysis

Dedicated PC Software that allows:

- Manual / Automatic analysis
- Periodic data logger parameters set up (autozero time, autozero range, stand-by time, sampling range, number of analysis cycles, start and end date of the analysis)
- Pump control
- Graphical or numerical presentation of the parameters
- Alarms
- Set up all instrument parameters
- Fuels set up
- Alarms set up
- 4-20mA channels set up
- Operator data set up
- CSV files data storing



Windows Software
Seitron Smart Analysis



Technical Features

Power supply	90 .. 264 Vac
Power absorption at 230 V	100 VA
Display	TFT 4.3" , 272 x 480 pixels graphic color with backlight
PC Communication port	USB Connector type A
Connectivity	USB-RS485 MODBUS RTU
Autozero	Automatic autozero cycle with the probe inserted in the chimney
Internal Sampling pump	2.2 l/min head at the stack up to 300 hPa.
Line Filters	Replaceable cartridge, 95% efficiency with 20um particles
Sample treatment	Peltier cooling system with automatic emptying of the condensation water
Size	19" /4 HE / 400 mm
Operation temperature	32°F .. 113°F (+0°C .. + 45°C)
Stock temperature	-4°F .. 140°F (-20°C .. + 60°C)
Alarm relay	4 x SPDT AC/DC 24 V 1A
Protection fuses	2 x 4A 5 x 20 T
Analog Outputs	4 x 4-20 mA max resistance load 1 KOhm
Gas 1, Gas 2 Output Connector	1/8 BSPP
Gas Input Connector	1/8 BSPP
Pressure P1, P2 Input Connector	1/8 BSPP
Condensate drainage Output Connector	1 /8 BSPP - fast connection tube 0.25" (6mm) diameter
Air Connector	1/8 BSPP
Compliant with European Standards	EN 50270, EN 50379-1 ed EN 50379-2
Compliant with USA Standard	CTM030 and CTM034

Standard Equipment

Code	Description
WFUS5X20004R	4A 5x20 delayed fuse
WFILA0001	Filtering cartridge for gas line and autozero line
WFILX0016	Particulate filter grade 7 for IR bench protection
WCAV0048	USB-A / USB-B adapter cable
AACCV01	Power cable
AACCV06	US power cable and plug
AASW17	S9000 Smart Analysis PC Software

Measured Gases

Gas	Sensor	Range	Resolution	Response Time (t 90)
CH ₄	NDIR	0-1000000 ppm (100%Vol)	1 ppm	< 10 sec
CO	NDIR	0 .. 2500 ppm	1 ppm	< 10 sec
CO	NDIR	0-50% Vol (500000ppm)	0,01%	< 10 sec
CO ₂	NDIR	0-50% Vol	0,1 % Vol	< 10 sec
HC	NDIR	0 .. 30000 ppm	1 ppm	< 10 sec
CO	EC	0 .. 8000 ppm	1 ppm	< 50 sec
CO	EC	0 .. 500.0 ppm	0,1 ppm	< 50 sec
H ₂	EC	0 .. 500.0 ppm	0,1 ppm	< 90 sec
H ₂ S	EC	0 .. 5000 ppm	0,1 ppm	< 50 sec
H ₂ S	EC	0 .. 500.0 ppm	0,1 ppm	< 50 sec
NH ₃	EC	0 .. 500.0 ppm	0,1 ppm	< 90 sec
NO	EC	0 .. 5000 ppm	1 ppm	< 50 sec
NO	EC	0 .. 500.0 ppm	0,1 ppm	< 50 sec
NO ₂	EC	0 .. 1000 ppm	1 ppm	< 50 sec
NO ₂	EC	0 .. 500.0 ppm	0,1 ppm	< 50 sec
O ₂	EC	0 .. 25 % Vol	0,1 % Vol	< 20 sec
SO ₂	EC	0 .. 5000 ppm	1 ppm	< 50 sec
SO ₂	EC	0 .. 500.0 ppm	0,1 ppm	< 50 sec

(*) The NDIR bench always measures the 3 gases CO, CO₂, HC (ref. to methane CH₄) or HC (ref. to propane C₃H₈)

Sensors for S9000 & S9000-RACK: Measurement Ranges And Accuracies

MEASUREMENT	GAS SENSOR	MEASUREMENT RANGE	RESOLUTION	ACCURACY
O2	Electrochemical sensor	0 .. 25.0% vol	0.1% vol	±0.2% vol
CO with H2 compensation	Electrochemical sensor	0 .. 8000 ppm	1 ppm	±10 ppm 0 .. 200 ppm ±5% measured value 201 .. 2000 ppm ±10% measured value 2001 .. 8000 ppm
CO with active dilution	Electrochemical sensor	0 .. 100000 ppm	100 ppm	±20% measured value
CO Low range with H2 compensation	Electrochemical sensor	0 .. 500.0 ppm	0.1 ppm	±2 ppm 0 .. 40.0 ppm ±5% measured value 40.1 .. 500.0 ppm
CO Low range with active dilution	Electrochemical sensor	6.250 ppm	10 ppm	±20% measured value
CO	Electrochemical sensor	0 .. 20000 ppm	1 ppm	±100 ppm 0 .. 2000 ppm ±5% measured value 2001 .. 4000 ppm ±10% measured value 4001 .. 20000 ppm
CO with dilution	Electrochemical sensor	0 .. 250000 ppm	100 ppm	±20% measured value
CO	Electrochemical sensor	0 .. 100000 ppm	100 ppm	±0.02% vol o ±5% m.v. 0 .. 2.00 % ±5% measured value 2.01 .. 10.00 %
NH3	Electrochemical sensor	0 .. 5000 ppm	0.1 ppm	±10 ppm 0 .. 100 ppm ±10% measured value 101 .. 500.0 ppm
NO	Electrochemical sensor	0 .. 5000 ppm	1 ppm	±5 ppm 0 .. 100 ppm ±5% measured value 101 .. 5000 ppm
NO Low range	Electrochemical sensor	0 .. 500.0 ppm	0.1 ppm	±2 ppm 0 .. 40.0 ppm ±5% measured value 40.1 .. 500.0 ppm
NOx	Electrochemical sensor			
SO2	Electrochemical sensor	0 .. 5000 ppm	1 ppm	±5 ppm 0 .. 100 ppm ±5% measured value 101 .. 5000 ppm
SO2 Low range	Electrochemical sensor	0 .. 500.0 ppm	0.1 ppm	±2 ppm 0 .. 40.0 ppm ±5% measured value 40.1 .. 500.0 ppm
NO2	Electrochemical sensor	0 .. 1000 ppm	1 ppm	±5 ppm 0 .. 100 ppm ±5% measured value 101 .. 1000 ppm
NO2 Low range	Electrochemical sensor	0 .. 500.0 ppm	0.1 ppm	±2 ppm 0 .. 40.0 ppm ±5% measured value 40.1 .. 500.0 ppm
CxHy	Electrochemical sensor	0 .. 5.00% vol	0.01% vol	±0.25% vol
H2	Electrochemical sensor	0 .. 2000 ppm	1 ppm	±10 ppm 0 .. 100 ppm ±10% 100 .. 2000 ppm
H2S	Electrochemical sensor	0 .. 500.0 ppm	0.1 ppm	±5 ppm 0 .. 100.0 ppm ±5% measured value 100.1 .. 500.0 ppm
H2S	Electrochemical sensor	0 .. 5,000 ppm	0.1 ppm	±5 ppm 0 .. 100.0 ppm ±5% measured value 100.1 .. 500.0 ppm
			1 ppm	±10% measured value 501 .. 5000 ppm

CO2	Calculated	0 .. 99.9% vol	0.1% vol	
CO2	NDIR sensor	0 .. 50.0% vol	0.01% vol	±1% Vol 0.00 .. 10.00 % ±2% Full-scale 10.01 .. 50.00 %
CO2 0-50% *	NDIR bench	0 .. 50.0% vol	0.1% vol	+/- 0,3% Vol 0,00 .. 8,00% Vol +/- 5% vm 8,01% .. 40,00% Vol +/-10% vm 40,01% .. 50,00% Vol
CO 0..50% *	NDIR bench	vol 500.000 ppm	100 ppm	0-2500 ppm : +/- 50 ppm 1 ppm 2501 -100000 ppm : +/- 3% vm 10ppm 100001 -250000 ppm : +/- 5% vm 10ppm
HC * referred to methane	NDIR bench	0-1.000.000 ppm (100%Vol)	1 ppm	+/- 50ppm 0 .. 200 ppm +/- 2% vm 201 .. 50000 ppm +/- 3 % vm 50001 .. 1000000ppm
HC * referred to propane	NDIR bench	0 .. 100000 ppm	1 ppm	+/- 10ppm 0 .. 300 ppm +/- 3% vm 301 .. 4000 ppm +/-5% vm 4001 .. 30000 ppm
Air temperature	TcK sensor	-4 .. 248 °F (-20.0 .. 120.0°C)	32.2°F (0.1 °C)	-30 .. +34 °F (±1°C)
Flue gas temperature	TcK sensor	-4 .. 2282 °F (-20.0 .. 120.0°C)	32.2°F (0.1 °C)	-30 .. +34 °F (±1°C) 32 .. 212 °F (0 .. 100 °C) ±1% measured value 214 .. 2282 °F (101 .. 1250°C)
Auxiliary sensor temperature	PT100	-4 .. 392 °F (-20.0 .. 200.0°C)	32.2°F (0.1 °C)	-31 .. +33 °F (±0.5°C)
Pressure (draft and differential)	Piezoelectric sensor	-4 .. 80 inH2O	0.004 inH2O	±1% measured value -4 .. -0.81 inH2O ±0.008 inH2O -0.8 .. +0.8 inH2O ±1% measured value +0.81 .. +80 inH2O
Temperature Differential	Calculated	32 .. 2282°F (0 .. 1250.0 °C)	32.2°F (0.1 °C)	
Excess Air	Calculated	0 .. 850%	1%	
Stack heat losses	Calculated	0.0 .. 100.0%	0.1%	
Efficiency	Calculated	0.0 .. 100.0%	0.1%	
Efficiency (condensation)	Calculated	0.0 .. 120.0%	0.1%	

(*): The NDIR bench always measures the 3 gases CO, CO2, HC (ref. to methane CH₄) or HC (ref. to propane C₃H₈)

ACCESSORIES

Article	Description	S1500-P S4500	S1500-NP S6000	S9000	S9000- RACK
AAST04	Thermal printer with Bluetooth® connection	X			
AACR10	Hard plastic kit case for S1500 / S4500 / S6000	X			
AAZN01	Fabric bag with shoulder belt / backpack	X			
AAEB01	Trunk extension			X	
AATY01	Trunk trolley			X	
AACSA04	4" (100mm) Auxiliary temperature sensor PT100 4W, with 10ft (3m) cable			X	X
AASP01	Heat protection shield for probes	X		X	X
AAFS02	Stainless steel sintered filter with support for probe	X		X	X
AATT01	'L' shaped Pitot Tube (without Tc-K thermocouple): length 12" (300mm) - external ø 0.24" (6mm). Supplied with 2 silicone tubes, with 6.5 ft (2m)	X		X	X
AATT02	'L' shaped Pitot Tube (without Tc-K thermocouple): length 32" (800mm) - external ø 0.24" (6mm). Supplied with 2 silicone tubes, with 6.5 ft (2m)	X		X	X
AATT03	36" (900mm) S-Type Stainless Steel Pitot tube	X		X	X
AAPM02	Manual smoke pump for oil applications	X			
AACKP02	Pressure kit (hoses + fittings) for manometer feature	X		X	X
AAEX01	10' (3 m) extension cable for flue gas probe	X			
AAEX02S	10ft (3 m) extension hose for smoke sampling sensors			X	X

SPARE PARTS

Article	Description	S1500-P S4500	S1500-NP S6000	S9000	S9000- RACK
AAKA01	Power Adapter Kit For Analyzers; 90÷264V~ / 5V A2 = Power adapter with US plug adapter and USB A / USB B cable, 6.5' (2 m)	X			
AAUA03	USB-A / USB-B adapter cable			X	
WFUS5X20004R	4A 5x20 delayed fuse			X	X
WCAV0048	USB-A / USB-B adapter cable				X
AACCV01	Power cable				X
AACCV06	US power cable and plug			X	X
AAPB12	Li-Ion battery pack 11.1V 6.2 Ah			X	
AARC09	No-fading thermal paper roll for AAST04 wireless separate printer	only for S1500-NP		X	X
AARC10	No-fading thermal paper roll for built in printer (S1500, S4500, S6000)	X (not for S1500-NP)		X	X
AAFS01	Replacement inox filter for AAFS02 Sintered Filter assembly	X		X	X

SPARE PARTS

Article	Description	S1500-P S4500	S1500-NP S6000	S9000	S9000- RACK
AACFA01	Particulate filters for AACTA03A water trap	X			
AAFA02	Internal Particulate Filter for Gas & Autozero line (2 pcs)				X
AAFA03	Anti-dust filter HDPE 100um for industrial motors' probe (2 pcs)			X	
AAFA04	Anti-dust filter (2 pcs), only with NH3 sensors installed			X	X
WFILX0016	External Particulate Filter for IR Bench protection			X	X
AACTA03A	Water trap w/ filter, stainless steel fitting & silicon hose suitable for all emissions analyzers	X			

GAS PROBES

Article	Description	S1500-P S4500	S1500-NP S6000	S9000	S9000- RACK
AASF82A	12" (300 mm) flue gas probe with 5' (1.5 m) cable	X			
AASF62A	12" (300 mm) flue gas probe with 10' (3 m) cable	X			
AASF65A	30" (750 mm) flue gas probe with 10' (3 m) cable	X			
AASF66A	40" (1000 mm) flue gas probe with 10' (3 m) cable	X			
AASA08	Outdoor air/Primary Air temperature TcK probe: 8" (200 mm), with 6.5' (2 m) cable	X			
AASF31	7" (300mm) flue gas sampling probe with 10ft (3m) cable. Working temperature range: 752°F (400°C).			X	X
AASF32	12" (300mm) flue gas sampling probe with 10ft (3m) cable. Working temperature range: 1112°F (600°C)			X	X
AASF35	30" (750mm) flue gas sampling probe with 10ft (3m) cable. Working temperature range: 1472°F (800°C)			X	X
AASF36	40" (1000mm) flue gas sampling probe with 10ft (3m) cable. Worknig temperature range: 2192°F (1200°C)			X	X
AASJ03	Probe handle for smoke extraction; without ferrule, cable length 10ft (3m), with ø 0.35" (9mm) fitting.			X	X
AASX03	30" (750mm) sampling probe for industrial motors, with 10ft (3 m) hose			X	X
AASY01	Probe for carbon black smoke measurement, with 11.5ft (3.5m) hose			X	X
AAPT03	12" (300mm) tip for carbon black smoke measurement probe (AASY01)			X	X
AAPT04	30" (750mm) tip for carbon black smoke measurement probe (AASY01)			X	X
AASR03	Heated sampling probe, 12" (300mm) tip and electrically heated 10ft (3m) hose, with thermocouple			X	X
AASR04	Heated sampling probe, 40" (1000mm) tip and electrically heated 10ft (3m) tube, with thermocouple			X	X

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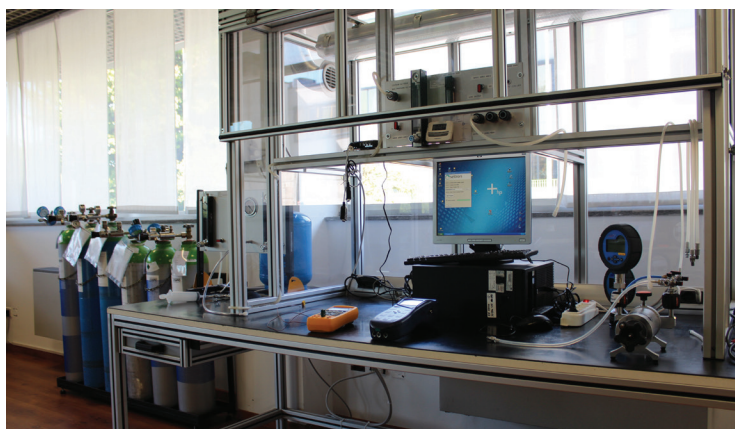


Maintenance and Service

A high-quality, up-to-date and certified instrument in compliance with current standards is essential in carrying out your work in the best possible way, while minimizing liability.

List:

- Gases (O₂, CO, CO₂, CH₄, C₃H₈, NH₃, NO, NO₂, SO₂, C_xH_y)
- Temperature
- Pressure
- Humidity
- Current
- Air Flow



Our staff has many decades of experience in the sector, being a solid point of reference for the companies that rely on us.

Services offered:

- Calibration
- Annual certification
- Training
- Repairs
- Field technical support in real time

**On-Site Services****CAL Adjustments****Training****CONTACT INFO**

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