Emission Industrial Analyzers

MADE IN ITALY

seitron

CHEMIST SERIES for Industrial Emissions Analysis

Our team is committed to provide the most suitable and custom version of any instrument to match almost any application and need. 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 and high resources consuming processes, great quantities of toxic gases are produced, such as carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxide (NOx) or sulfur dioxide (SO2).
Emissions measurements, necessary for the control of the combustion efficiency, are often performed in extreme environments, with high level of humidity, high temperatures and presence of combustion powder. The analysis are typically performed by special labs, maintenance technicians of industrial plants or by the industries themselves.
In order to answer these needs, Seitron has developed a range of industrial emissions analyzers, both portable for periodical measurements and fixed for continuous analysis.

CHEMIST 600 and CHEMIST 600 BE GREEN are compact, portable instruments, that can measure up to 6 different gases and that can be customized upon customers' requirements.

Analyzer CHEMIST 900 offers the maximum flexibility as it incorporates both NDIR and electro-chemical technologies, which allow for the measurement of up to 12 different gases, all in a convenient portable format.

Analyzer CHEMIST 900 RACK is the instrument dedicated to the continuous measurement of industrial emissions. Thanks to its rack mounting, it is ideal for research and development environments as well as process monitoring.

Applications

Chemical Industries

Laboratories

Biogas Factories

Industrial Motors

Industrial Burners

Waste-to-energy Plants

Pellet Boilers

Industrial Cement Furnaces

Novo 4

UP TO 4 SENSORS

PORTABLE COMBUSTION ANALYZER

7” Touch Display

15 Preprogrammed Fuels (Including Wood, Pellets, Biogas And Coal)

CO Protection Dilution Pump

Rechargeable Li-Ion Batteries

Integrated and easy to clean water trap, with LED backlight

4 Pa Ventilation Measurement

Simultaneous measurement of boiler gas pressure

Draught Measurement

Tightness Test

Biomass Combustion Analysis

reddot winner 2022

4 YEARS WARRANTY ON INSTRUMENT AND GAS SENSORS

Seitron Smart Analysis

GET IT ON Google Play | Download on the App Store | EXPLORE IT ON AppGallery

Seitron Smart Analysis Windows 10

Windows 7 or later

EVERY KIT INCLUDES:

- Instrument
- Flue gas probe with 300 mm interchangeable tip
- Integrated water trap
- Combustion air temperature Probe
- Tube for gas valve pressure measurement
- Power Adapter and International Plug
- Hard plastic kit case
- Quick Guide
- Calibration Certificate

MAIN FEATURES

- Precalibrated Gas Sensors
- 3 analysis in sequence with automatic calculation of the average value and printing of the result
- Automatic autozero (with flue gas sampling probe inserted in the chimney)
- Autozero pressure sensor, for a more stable and reliable draft measurement
- Self-diagnosis with verification of the functions and status of the sensors
- Language selectable by the user
- Automatic calculation of pipe volume
- Integrated magnets
- 100 MB for complete analysis memory
- Dimensions:
  Analyzer 270Hx93Lx68D mm, weight 0,9 Kg
  Kit 125Hx465Lx335D mm, weight 5 Kg

MEASURED VALUES

- Flue gas temperature and differential temperature
- Outdoor air temperature and room temperature
- Draft and differential pressure
- CO concentration in ambient air

CALCULATED VALUES

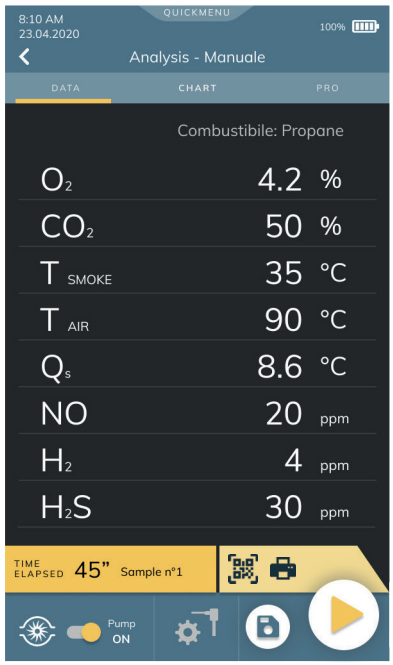
- Boiler efficiency, including condensation
- Stack losses and excess air
- CO
- Flow velocity with Pitot tube

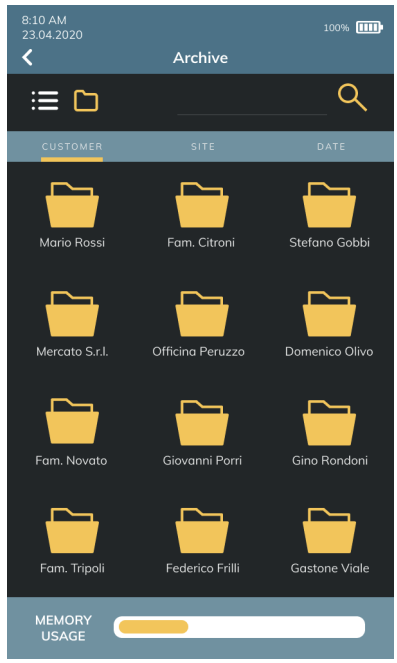
CARATTERISTICHE	Novo 4S	Novo 4N	Novo Bio (*)
O2 Sensor	✓	✓	✓
CO/H2 Sensor	✓	✓	
NO Sensor	✓	✓	
NOx Calculated	✓	✓	
NO2 Sensor		✓	
NOx Measured (NO+NO2)		✓	
SO2 Sensor	✓		
CO2, CH4, H2S sensors			✓
Kit with integrated printer	Novo 4S-P	Novo 4N-P	
Kit with Bluetooth Printer *(Thermal Paper Roll included)*	Novo 4S-ST	Novo 4N-ST	

Novo X
Modular Gas Analyzer Kit up to 4 sensors (O_2 + up to 3 sensors of your choice)

Intuitive interface

In addition to the elegant and ergonomic design, Novo features a simple, intuitive and efficient touchscreen interface.
The new and intuitive interface allows the user to quickly create customizable combustion reports, set and/or change the parameters of the device, carry out multiple optional measurements, and much more.
There is also the possibility to customize the home screen, with user's profile picture and information.
The combustion report can be shared in different formats or it can be printed by using the built-in integrated printer or the optional wireless Bluetooth printer.
The new generation of LONG-LIFE gas sensors, installed in Novo, enhances reliability and accuracy of the measurements, tougheter with a longer sensor life compared to the competitors.

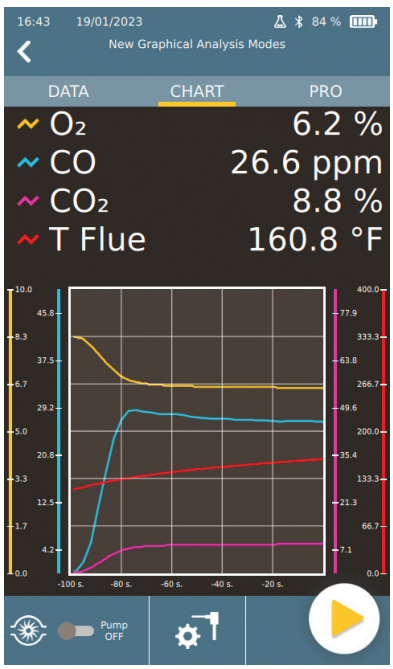


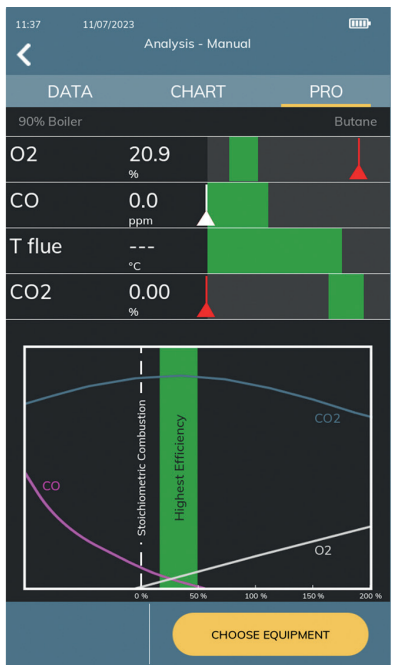


Graphs

NEW

View of the values charts detected in real time.
Possibility to change the mode Text data, Graphics, Professional.
In Pro mode it is possible to adjust the boiler by graphically displaying the area in which the values are optimal.



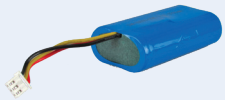


Novo - GAS SENSORS

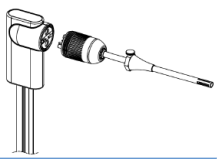
GAS	CODE	RANGE	RESOLUTION	ACCURACY
O2 Long Life *	Novo O2 LL	0...25% v/v	0.1% vol	±0.2% vol
CO / H2	Novo CO/H2	0...500.0 ppm	0.1 ppm	±2 ppm 0 .. 40 ppm ±5% v.m. 40.1 .. 500.0 ppm
		501...8000 ppm	1 ppm	±10% v.m. 501 .. 8000 ppm
CO Mid	Novo CO Mid	0...20000 ppm	1 ppm	±10 ppm 0 .. 200 ppm ±5% v.m. 201 .. 4000 ppm ±10% v.m. 4001 .. 20000 ppm
CO High	Novo CO High	0...100000 ppm	1 ppm	±100 ppm 0 .. 1000 ppm ±10% v.m. 1001 .. 100000 ppm
NO	Novo NO	0...500.0 ppm	0.1 ppm	±2 ppm 0 .. 40 ppm ±5% v.m. 40.1 .. 500.1 ppm
		501...5000 ppm	1 ppm	±10% v.m. 501 .. 5000 ppm
NO2	Novo NO2	0...100.0 ppm	0.1 ppm	±2 ppm 0 .. 40 ppm ±5% v.m. 40.1 .. 100.1 ppm
		101...1000 ppm	1 ppm	±10% v.m. 101 .. 1000 ppm
SO2	Novo SO2	0...500.0 ppm	0.1 ppm	±2 ppm 0 .. 40 ppm ±5% v.m. 40.1 .. 500.1 ppm
		501...5000 ppm	1 ppm	±10% v.m. 501 .. 5000 ppm
H2	Novo H2	0...2000 ppm	1 ppm	± 10 ppm 0 ppm - 100 ppm ± 10% v.m. 101 ppm - 2000 ppm
H2 High	Novo H2 High	0...40000 ppm	10 ppm	± 100 ppm 0 ppm - 1000 ppm ± 10% v.m. 1001 ppm - 40000 ppm
H2S	Novo H2S	0...5000 ppm	1 ppm	± 10 ppm 0 ppm - 100 ppm ± 10% v.m. 101 ppm - 5000 ppm
H2S Low	Novo H2S Low	0...500.0 ppm	0.1 ppm	±5 ppm 0 .. 100.0 ppm ±5% v.m. 101 .. 500.0 ppm
NH3 Low	Novo NH3 Low	0...500.0 ppm	0.1 ppm	±10 ppm 0 .. 100.0 ppm ±10% v.m. 100.1 .. 500.0 ppm
CxHy	Novo CxHy	0..5% vol CH4	0.01% vol	±0.25% abs
CH4 NIDR	Novo CH4 NDIR	0..100% vol	0.01% vol	±0.3 vol 0 .. 10% vol ±10% v.m. 10.01% .. 100.00% vol
CO2 NDIR	Novo CO2 NDIR	0..50% vol	0.01% vol	±1 vol 0 .. 10.00% vol ±2% fs 10.01% .. 50.00% vol

*: Sensor replaceable by the user

Accessories and Spare Parts

CODE	PHOTO	DESCRIPTION
AJPB01		Li-Ion Rechargeable Battery; 3,7Vdc - 6 A/h
AJKA02		Power supply with US plug, USB type C and 1.8 m cable
AJCR01		Hard plastic Case
AACE01		Active external cooler (compatible with AASF3xx probes)
AJTA01		Water trap with flue gas filter
AACFA01		Dust filters for AACTA03 (pack of 5 pieces) dimensions 12x32 mm
AARC10		Long Life thermal paper roll 57x35
AAST04		Thermal printer with Bluetooth connection
AAKT05		Kit for tightness test with 4 ways manifold, manual pump, 100 ml syringe, hoses, 1 silicone conical fitting
AATL01		S-probe with clamp for 8 mm tips, for use on exhaust systems
AAPM02		Manual pump for measuring carbon black + filters + BACHARACH table

Accessories for industrial measurements, high temperatures and particularly dirty smokes

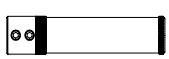


AJSJxx + AJPTxx
Smoke analysis probe

+

AASP01
Heat shield

+



AAFS02
Stainless steel filter with adapter

CODE	PHOTO	DESCRIPTION
AJTB01		Gas pressure tube; length 1 m
AJKP01		Differential pressure measurement Kit
AJSJ01		Flue gas sampling probe handle with 1.8 m cable
AJSJ02		Flue gas sampling probe handle with 3 m cable
AJPT01		180 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 400°C
AJPT02		300 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 600°C
AJPT03		750 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 800°C
AJPT04		1000 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 1200°C
AJPT05		300 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 160°C
AJEX01		3 m extension cable for smoke sampling probes with handle AJSJ01
AJCP01		External unit for passive sample treatment, for NO2 and SO2 measurement, compatible with AJSJ-- probe (probes with interchangeable tip for NOVO)
AATT01		“L”shaped Pitot Tube. 300 mm length, 6 mm external diameter. Without thermocouple
AATT02		“L”shaped Pitot Tube. 800 mm length, 6 mm external diameter. Without thermocouple

CHEMIST 600 BE GREEN / 600

UP TO 6 SENSORS

CHEMIST 600 BE GREEN

CHEMIST 600
Built-in Printer

INDUSTRIAL EMISSIONS ANALYZER

Blue Backlit Lcd (55 X 95 Mm)

15 Preprogrammed Fuels (Including Wood, Pellets, Biogas And Coal)

CO Protection Dilution Pump

Rechargeable Lithium Ion Batteries

Qr Code To Acquire Analysis With Smartphone

External Water Trap with Dust Filter

4 Pa Ventilation Measurement

Draught Measurement

Tightness Test

1 YEAR WARRANTY ON INSTRUMENT AND GAS SENSORS

Seitron Smart Analysis

GET IT ON Google Play | Download on the App Store | EXPLORE IT ON AppGallery

Seitron Smart Analysis Windows 10

Windows 7 or later

EVERY KIT INCLUDES:

- Instrument
- 300 mm Smoke Probe with 3 m cable
- Water trap with dust filter, stainless steel fittings and silicon hose
- Combustion air temperature Probe
- Preassure Measures Kit
- Power Adapter and International Plug
- Hard plastic kit case
- Quick Guide
- Calibration Certificate

MAIN FEATURES

- Precalibrated gas sensors
- 3 consecutive analysis with average calculation
- Automatic autozero with sampling probe in the stack
- Self diagnostic function with sensors status
- 10 different preprogrammed languages
- Automatic calculation of gas pipes volume
- Hard plastic body with magnets
- Internal memory for 1000 analysis
- Dimensions:
  Analyzer 270Ax93Lx68Pmm, weight 0,8 Kg
  Kit 130Ax510Lx430Pmm, weight 3,4 Kg

MEASURED VALUES

- Flue gas temperature and Temperature Differential
- Outdoor air temperature and room temperature
- Draft and Pressure Differential
- Ambient CO

CALCULATED VALUES

- Boiler efficiency, including condensing
- Stack losses and excess air
- CO
- Flow velocity with Pitot tube
- Burning power

FEATURES	605 / 605 BG	606 HC / 606 HC BG	606 CO2 / 606 CO2 BG
up to 6 senosrs	✓	6 sensors	6 sensors
O2 Sensor	✓	✓	✓
CO/H2 (0 .. 8000 ppm) Sensor	✓	✓	✓
NO Sensor	✓	✓	✓
NO2 Sensor	✓	✓	✓
SO2 Sensor	✓	✓	✓
CxHy Measured	-	✓	-
C02 Sensor	-	-	✓
NOx Measured (NO+NO2)	✓	✓	✓

CHEMIST 600 X BE GREEN / X 600

Modular Gas Analyzer Kit up to 6 sensori of your choice

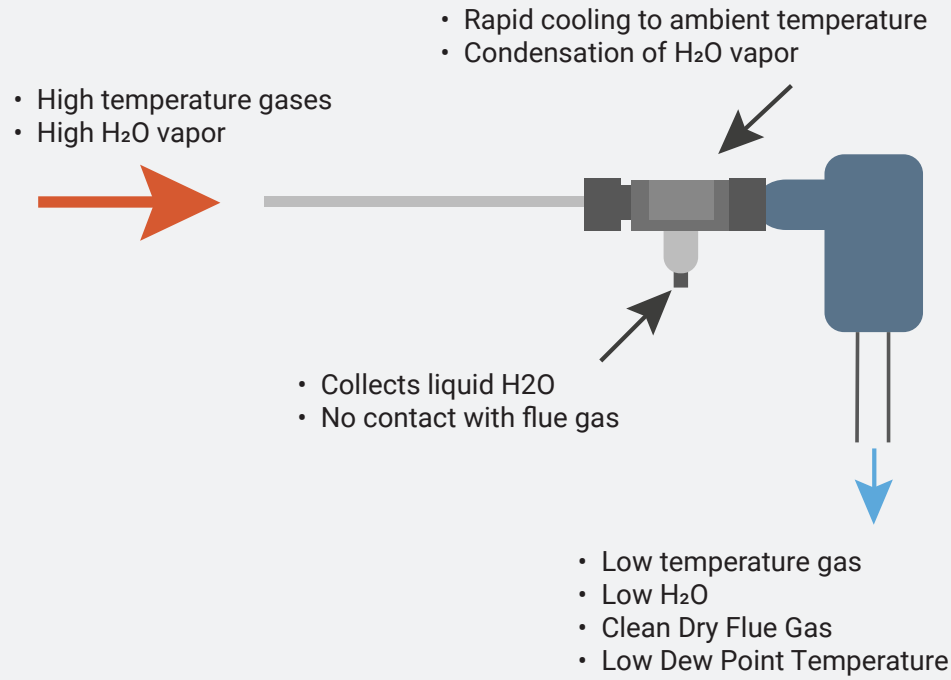
FUELS			
Natural Gas	Coal	Diesel Oil	Wood Chips
Propane	Biogas	Fuel Oil	Propane Air
LPG	Pellet 8% (RH)	Olive pits	Rice husks
Butane	Wood 20% (RH)	CO of gas	

Sample Conditioning Unit (SCU)
for Low NOx & Low SOx Measurements

When using a portable gas analyzer for monitoring NO, NO2 and/or SO2 ranges below 50 ppm or if you are doing Long-term testing (over 40+ min), we need a sampling system designed to minimize or eliminate the residence time of the soluble gases in contact with condensing water droplets forming in side the walls of the sampling lines. Otherwise, the measured readings could be in excess of 20% lower than the actual values in the process.

Passive Mode

External unit for sample processing

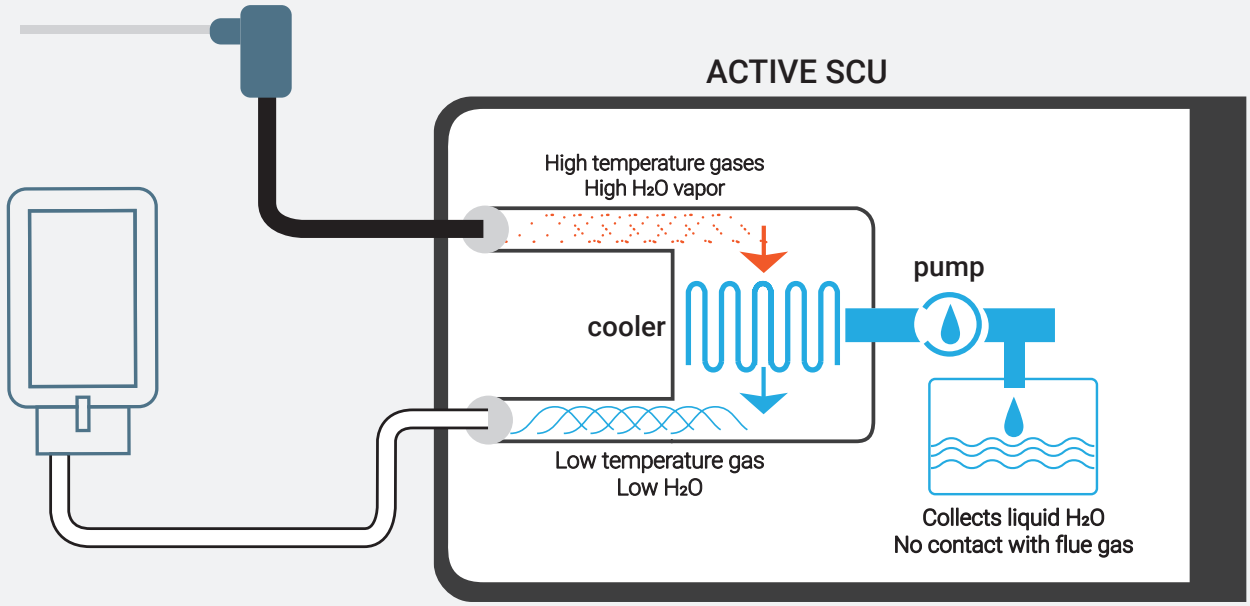


AJCP01
Features:

- Simple plug & play installation
- Fast cooling to room temperature
- Easy maintenance
- Compatible with AJSJxx and AASJxx handles

Active Mode

External cooler for sample processing



AACE01
Features:

- Recommended use in high humidity environments and for the measurement of NO2, SO2, NH3, and H2S.
- Power supply: 110 to 240 Vac
- External power supply through 12V external power bank
- Integrated Peltier thermoelectric cooler
- Fast cooling and drying of exhaust gas samples
- Compatible with all portable gas analyzers by Seitron
- Automatic condensate drainage pump
- Protective hard plastic carrying case
- Includes adapters for AASFxx and AJSJxx probes

CHEMIST 900 1-12 SENSORS
INDUSTRIAL EMISSIONS ANALYZER

Chemist 900 is an industrial emissions and combustion analyzer, mainly used for industrial burners, cogeneration groups, gas turbines, industrial ovens and processes, laboratories and, generally, any where the need is to measure and register for long periods the gas emissions, in compliance with existing regulations.

PRICE ON REQUEST
CHEMIST 900 WARRANTY:
1 YEAR ON INSTRUMENT, GAS SENSOR AND PRINTER

Seitron Smart Analysis

GET IT ON Google Play | Download on the App Store | EXPLORE IT ON AppGallery

Seitron Smart Analysis
Windows 10

Windows 7 or later

THE INSTRUMENT CONSISTS OF:

- Gas sampling system
- Expansion water trap
- Combustion Air temperature with 200mm tip
- Kit for differential temperature measurement
- 1000mm hose for remote condensate drainage
- USB cable
- Power supply cable
- UE/Schuko/USA plug
- Configuration software for laptop on usb pendrive
- Instructions manual
- Calibration certificate

Designed for:

- Water trap system/cyclone cooling with Peltier sensor
- Installation with 1 to 9 sensors for “flex” electrochemical gases
- NDIR bench to measure up to 3 gases
- Gas sampling probe (with or without heated head)

MAIN FUNCTIONS

- Heated Sampling Probes (up to 6 m)
- Efficiency calculations
- Condesing efficiency calculation
- PCI efficiency calculation
- PCS efficiency calculation
- 15 default fuels
- 32 settable fuels
- CO sensor protected by an automatic dilution system

MEASUREMENT

- NDIR bench (measuring up to 3 gases)
- Electrochemical gas measurement sensors (up to 9)
- Local or remote combustion air measurement
- Sensors temperature measurement through thermal compensation
- Measurement of the differential pressure
- Air speed for air or flue gas leaving the stack with the use of Pitot tube
- Suction pump flow rate measurement

CHEMIST 900

Central Unit Version	Flex gas sensors (max 9)	NDIR bench (CO2/CO/ CxHy)	Anti-condensation cyclone Cooler with Peltier cell	Anti-condensation trap
Chemist 901	✓	-	-	✓
Chemist 901 IR3	✓	✓	-	✓
Chemist 902	✓	-	✓	-
Chemist 902 IR3	✓	✓	✓	-

GAS SAMPLING SYSTEMS

- **Passive Type:** utilizes sensors with different tip lengths and fittings, made of different materials, with flexible tube connection to the central unit in various lengths.

- **Active Type:** utilizes gas sampling sensor with heated head and flexible tube. This characteristic prevents water vapour condensation to reach the central unit, since it affects measurements of gases 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 vapour condenses so quickly that the NO2 and SO2 gases do not have time to dissolve in water.

Passive gas sampling probe

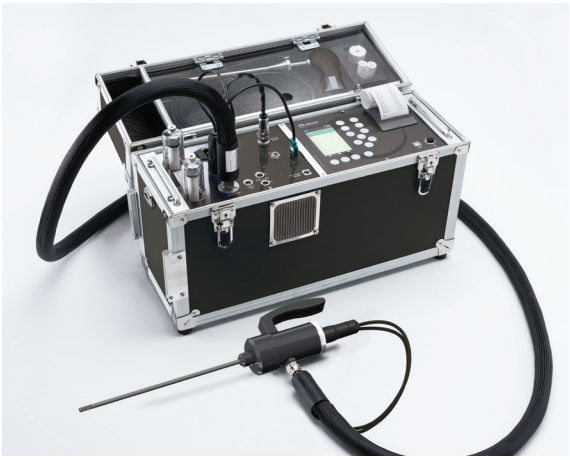
Active gas sampling probe with heated head and hose

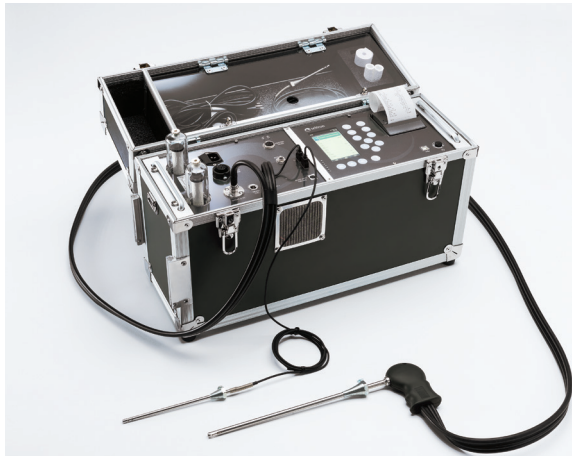
Gas sampling probe for industrial motors

CHEMIST 900 - 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 cell group). 2 hours with Cooler working.
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: Infrared bench: Fuel type:	Up to 9, configurable among electrochemical, NDIR (single cell) and Pellistor. 3 gases NDIR bench: CO, CO2, CxHy. 12 preprogrammed and 16 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 sensor. 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 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 +5°C +10°C from set point Peristaltic hose 38 ml/min 30s On .. 30s Off ~ 15 .. 20 minutes -5°C .. +45°C Integrated Peristaltic hose 38 ml/min -5°C .. +45°

Carbon black:	Using a manual external pump; the smoke index can be uploaded and printed.
Tightness test (where required):	Tube gas tightness test with separate receipt printing, using AAKT05 accessory, subject to European standards UNI 7129 (new installations) and UNI 11137: 2012 (existing installations), with automatic calculation of the tube volume.
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.
Draught test:	Draught test execution using external probe (AACDP02)
Working temperature:	-5°C .. +45°C
Storage temperature:	-20°C .. +50°C
Humidity limit:	20% .. 80% RH
Protection level:	IP21
External dimensions:	50 x 36 x 20 cm (W x H x D). 50 x 46 x 13 cm (W x H x D) with intermediate drawer for heated head and sensor transportation.
Weight:	~ 12 kg (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). ~ 13 kg (Typical configuration with additional accessories such as: 3m extension for smoke sensor - auxiliary air sensor - 300mm Pitot Tube - draught gauge). ~ 16,7 kg (Typical configuration with additional accessories and intermediate drawer containing: heated head sensor with 300mm tip and heated tube).
Compliant with European standards EN 50379-1 and EN 50379-2 for the following measurements:	• O2 • CO • NO • SO2 • Temperature (flue gas) • Temperature (combustion air) • Pressure (draught) • Pressure (differential)

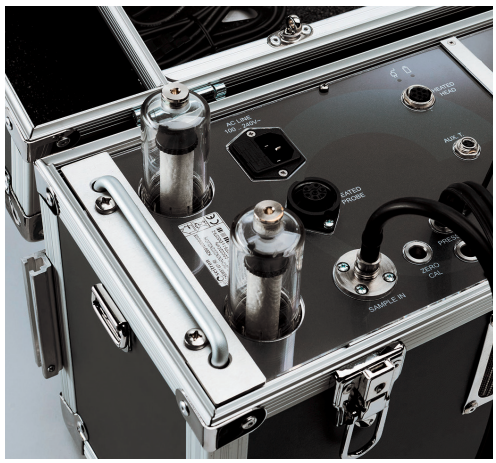




NDIR benches available for simultaneous measurement up to 3 gases:

Gas	Measure type	Range	Resolution	Response Time (t 90)
CO	NDIR	0 .. 2500 ppm 2500 .. 100000 ppm (10% Vol) 100000 .. 500000 ppm (50% Vol)	1 ppm 10 ppm 100 ppm	< 10 sec
CO2	NDIR	0 .. 50 % Vol	0,1 % Vol	< 10 sec
CH4 *	NDIR	0 .. 100 % Vol	1 ppm	< 10 sec
HC (C3H8)*	NDIR	0 .. 100 % Vol	1 ppm	< 10 sec

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

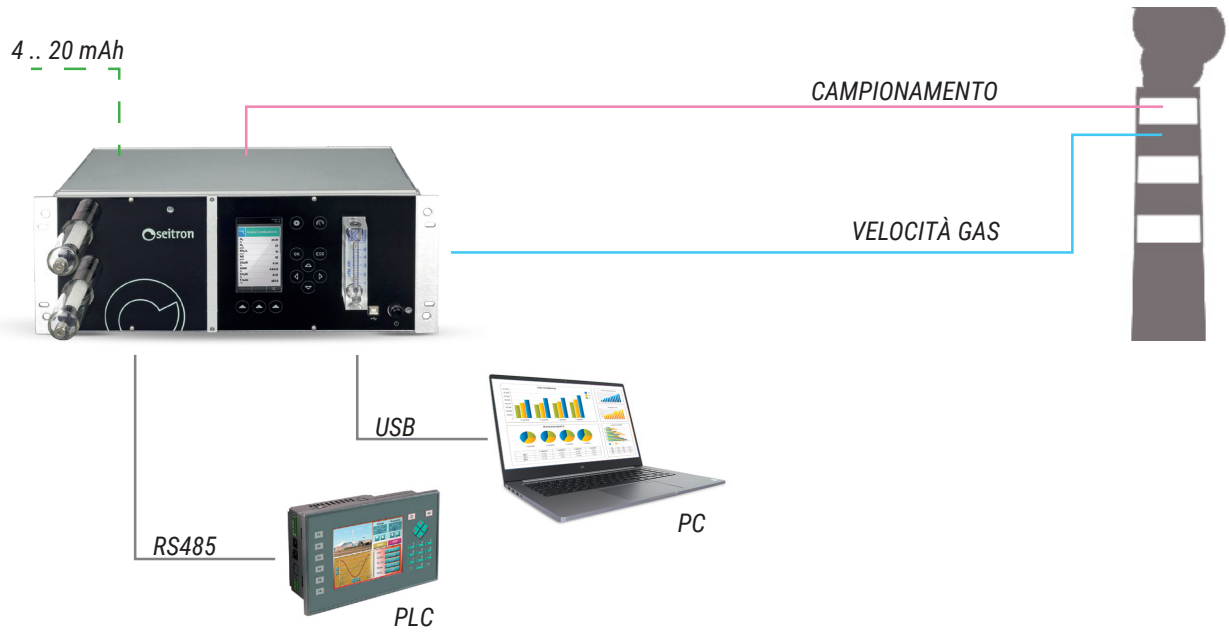


CHEMIST 900 RACK 1-8 SENSORS

INDUSTRIAL EMISSIONS ANALYZER

CHEMIST 900 RACK is an onsite continuous emissions monitor (CEM). This device can measure emissions generated by industrial combustion or transformation processes and it analyzes different gases thanks to the NDIR bench and electrochemical technology.
Combustions and emissions parameters are displayed in real time on a TFT color display, on a PC Software or on a PLC, that receives the 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 Chemist 900 Rack is its rack structure that allows to use it into standard 19" cabinet or even in labs as it is normally equipped comes standard equipped with 4 rubber bumpers. Chemist 900 Rack is designed to perform long-lasting analysis periods, thanks to an automatic commutation system that allows to reset both the gas sensors and the pressure sensor used for draft measures or differential pressure measures. This, together with a Pitot tube, allows the measurements of the smoke speed inside the evacuation duct. A relevant feature of the Chemist 900 Rack is a 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 water is collected into a water tank and emptied on a time basis by a membrane pump. The gas sample and the air used for sensors cleaning are filtered by two interchangeable dust filters. Chemist 900 Rack is equipped with a system that allows taking in gases from two different points (e.g. two stacks) and carry them into a single smoke suction line (image 1). All parameters and collected data are sent via serial communication port type RS485 and USB communication port in order to connect to the PC for the analysis reading. The user can record and analyze the collected data with the dedicated software provided with the instrument, Chemist Smart Analysis. Files are saved with .csv extension.

SAMPLING LINE SELECTION SYSTEM



THE INSTRUMENT CONSISTS OF:

- Gas sampling system
- Water trap system/cyclone cooling with Peltier sensor
- USB cable
- Power supply cable
- UE/Schuko/USA plug
- Calibration certificate
- Instructions manual

Designed for:

- Installation with 1 to 3 sensors for "flex" electrochemical gases
- NDIR bench to measure up to 5 gases
- Gas sampling probe (with or without heated head)

MAIN FUNCTIONS

- Serial communication port type RS485 according to protocol MODBUS® RTU USB Communication
- Possibility of communication on ethernet line with external module
- 4 .. 20 mA isolated output
- 4 alarm relays outputs
- Heated Sampling Probes
- Efficiency calculations
- Condensing efficiency calculation
- PCI efficiency calculation
- PCS efficiency calculation
- 15 default fuels
- 32 settable fuels
- CO sensor protected by an automatic dilution system

MEASUREMENT

- NDIR bench (measuring up to 3 gases)
- Electrochemical gas measurement sensors (up to 5)
- Smoke temperature measurement (2 temperatures)
- Local or remote combustion air measurement
- Sensors temperature measurement through thermal compensation
- Draft in the stack with automatic autozero
- Measurement of the differential pressure
- Air speed for air or flue gas leaving the stack with the use of Pitot tube
- Suction pump flow rate measurement

BANCHI NDIR

Recommended for combustion and emissions analysis

GAS	RANGE	RESOLUTION	RESPONSE TIME (t90)	RESOLUTION	
CO	0 .. 50% Vol	1 ppm 10 ppm 100 ppm	< 6 sec	±50 ppm ±3% m.v. ±5% m.v.	0 .. 2,500 ppm 2,501 .. 100,000 ppm 100,001 .. 500,000 ppm
CO2	0 .. 50% Vol	0,001 % vol	< 6 sec	±0,3% vol ±5% m.v. ±10% m.v.	0,000 .. 8,000% vol 8,010% .. 40,000% vol (**) 40,010% .. 50,000% vol
CH4	0 .. 1,000,000 ppm (100% vol)	1 ppm vol	< 6 sec	±50 ppm ±2% m.v. ±3 % m.v.	0 .. 200 ppm 201 .. 5,0000 ppm (***) 50,001 .. 1,000,000 ppm

Recommended for thermal processes

GAS	RANGE	RESOLUTION	RESPONSE TIME (t90)	RESOLUTION	
CO	0-40% Vol	0,001 % Vol	5 sec	+/- 0,5 FS or 0,2% Vol	
CO2	0 .. 25000 ppm	1 ppm Vol	5 sec	+/- 50 ppm +/- 275 ppm	0 .. 2,500 ppm 0 .. 25,000 ppm
CH4	0-10% Vol	0,001 % Vol	5 sec	+/- 1 FS or 0,1% Vol	

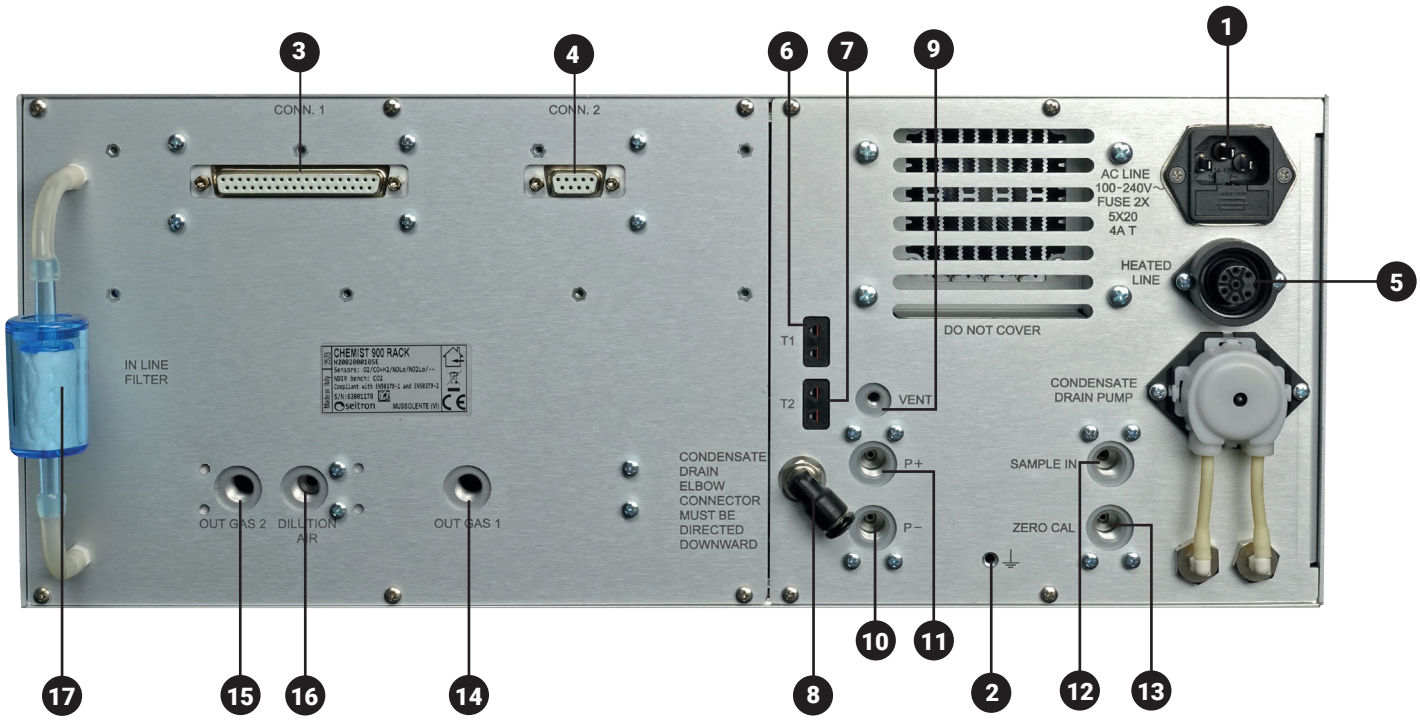
Recommended for engines

GAS	RANGE	RESOLUTION	RESPONSE TIME (t90)	RESOLUTION	
CO	0 .. 50% Vol	1 ppm 10 ppm 100 ppm	< 6 sec	±50 ppm ±3% m.v. ±5% m.v.	0 .. 2,500 ppm 2,501 .. 100,000 ppm 100,001 .. 500,000 ppm
CO2	0 .. 50% Vol	0,001 % vol	< 6 sec	±0,3% vol ±5% m.v. ±10% m.v.	0,000 .. 8,000% vol 8,010% .. 40,000% vol 40,010% .. 50,000% vol
HC (C3H8)	0 .. 100,000 ppm (10% vol)	1 ppm	< 6 sec	±10 ppm ±3% m.v. ±5 % m.v.	0 .. 300 ppm 301 .. 4,000 ppm 4,001 .. 100,000 ppm

**: Custom linear correction of sensors is available upon request to enhance precision within the range of 0 to 20%, with an accuracy improvement of +/- 0.15% Vol

***: Custom linear correction of sensors is available upon request to enhance precision within the range of 0 to 1000 ppm, with an accuracy improvement of +/- 10 ppm

DESCRIZIONE PANNELLO POSTERIORE



1. **'AC LINE - 100 .. 240V-' Connector IEC C14 socket** for connecting the power cable to the instrument. The socket has a fuse holder containing 2 fuses 5x20 4A T.

2. **Device grounding connection**

3. **37-pin Connector (8 outputs 4 .. 20 mA, 1 relay output, and 1 input connector)** Provides the user with 8 outputs 4 .. 20mA and 1 relay output with 1 input contact for instrument standby control.

4. **RS485 Serial Connector** Serial communication port of the RS485 type following the Modbus® RTU protocol.

5. **'HEATED LINE' Connector** Connector for connecting the heated tube.

6. **'T1' Connector** Tc-K connector for connecting the Tc-K male connector of the probe for measuring flue gas temperature.

7. **'T2' Connector** Tc-K connector for connecting the Tc-K male connector of the combustion air probe.

8. **Condensate water discharge**

9. **'VENT' Connector - Female Connection M5** Air inlet used by the pressure sensor for auto-zero. In case of installation on a rack or in pressurized environments, the air inlet must be moved remotely to ambient pressure.

10. **Pneumatic Connector 'P-' - Female connector 1/8 GAS BSPP** Negative input (P-) for draft measurement.

11. **Pneumatic Connector 'P+' - Female connector 1/8 GAS BSPP** Positive input (P+) for general pressure measurement.

12. **Pneumatic Connector 'SAMPLE IN' - Female connector 1/8 GAS BSPP** Inlet for connecting the flue gas sampling probe.

13. **Pneumatic Connector 'ZERO CAL' - Female connector 1/8 GAS BSPP** Inlet for connecting a tube for remote air intake for auto-zero. If the instrument is placed in a closed and polluted environment, you can move the instrument's air intake to a clean air environment using the 'ZERO CAL' connector

14. **'OUT GAS 1' Connector - Female connector 1/8 GAS BSPP** Remote outlet of the analyzed gas.

15. **'OUT GAS 2' Connector - Female connector 1/8 GAS BSPP** Remote outlet of the analyzed gas.

16. **'DILUTION AIR' Connector - Female connector 1/8 GAS BSPP** Remote air intake for CO dilution.

17. **Dust filter for infrared bench protection**

GAS SENSORS FOR INDUSTRIAL ANALYZERS

GAS	CODE	RANGE	RESOLUTION	ACCURACY	CHEMIST 600/600 BG	CHEMIST 900/900 RACK
O2 *	AACSE15	0...25% v/v	0.1% vol	±0.2% vol	✓	✓
O2 Long Life	AACSE44	0...25% v/v	0.1% vol	±0.2% vol	✓	✓
CO / H2	AACSE12	0...8000 ppm	1 ppm	±10 ppm 0 .. 200 ppm ±5% 201 .. 2000 ppm ±10% 2001 .. 8000 ppm	✓	✓
CO / H2 Low Range	AACSE24	0...500.0 ppm	0.1 ppm	±2 ppm 0 .. 40.0 ppm ±5% 40.1 .. 500.0 ppm	✓	✓
CO	AACSE17	0...10.00% Vol (100.000 ppm)	0.01% vol	±0.1% vol 0 .. 2.00 % ±5% 2.01 .. 10.00 %	✓	✓
CO	AACSE18	0...20000 ppm	1 ppm	±100 ppm 0 .. 2000 ppm ±5% 2001 .. 4000 ppm ±10% 4001 .. 20000 ppm	✓	✓
CO2 NDIR	AACSE47	0...50% v/v	0.1% vol	±1% 0 .. 10 % ±2% 10 .. 50 %	✓	✓
NO	AACSE10	0...5000 ppm	1 ppm	±5 ppm 0 .. 100 ppm ±5% 101 .. 5000 ppm	✓	✓
NO Low Range	AACSE25	0...500.0 ppm	0.1 ppm	±2 ppm 0 .. 40.0 ppm ±5% 40.1 .. 500.0 ppm	✓	✓
NO2	AACSE14	0...1000 ppm	1 ppm	±5 ppm 0 .. 100 ppm ±5% 101 .. 1000 ppm	✓	✓
NO2 Low Range	AACSE26	0...500.0 ppm	0.1 ppm	±2 ppm 0 .. 40.0 ppm ±5% 40.1 .. 500.0 ppm	✓	✓
SO2	AACSE13	0...5000 ppm	1 ppm	±5 ppm 0 .. 100 ppm ±5% 101 .. 5000 ppm	✓	✓
SO2 Low Range	AACSE28	0...500.0 ppm	0.1 ppm	±2 ppm 0 .. 40.0 ppm ±5% 40.1 .. 500.0 ppm	✓	✓
CH4 NDIR	AACSE73	0...100% v/v	0,01% Vol	0-10% 0,3% Vol 10%-100% 10% vm	✓	
CxHy	AACSE39	0...5.00% Vol CH4	0.01% vol	±0.25% vol	✓	✓
H2/CO Dual **	AACSE79	H2 0...2000 ppm	1 ppm	± 10 ppm 0 ppm - 100 ppm ± 10 % 100 ppm - 2000 ppm	✓	✓
		CO 0...8000 ppm	1 ppm	±10 ppm 0 .. 200 ppm ±5% 201 .. 2000 ppm ±10% 2001 .. 8000 ppm		
H2 High	AACSE78	0...40000 ppm	10 ppm	± 100 ppm 0 ppm - 1000 ppm ± 10 % v.m. 1001 - 40000 ppm	✓	✓
H2S	AACSE72	0...5000 ppm	1 ppm	+/- 5ppm 0-100,0 ppm +/- 5% v.m 100,0-500,0 ppm +/- 10% v.m 501-5000 ppm	✓	✓
H2S Low Range	AACSE35	0...500.0 ppm	0.1 ppm	±5 ppm 0 .. 100.0 ppm ±5% v.m. 100.1 .. 500.0 ppm	✓	✓
NH3	AACSE56	0...500.0 ppm	0.1 ppm	+/-10ppm 0...100.0ppm +/-10% v.m. 100.1 a 500.0	✓	✓

* : User replaceable sensor

** : For Chemist 600 and 900. The installation of AACSE79 takes up 2 sensor positions.
With this sensor it is not necessary to install AACSE12 for CO measurement.

Gas Analysis Probes

CODE	PHOTO	DESCRIPTION	CHEMIST 600/600 BG	CHEMIST 900	CHEMIST 900 RACK
AASF51A		180 mm flue gas sampling probe, cable length 2m, maximum temperature 400 °C, without anti-condensation unit	✓		
AASF62A		300 mm flue gas sampling probe, cable length 3m, maximum temperature 600 °C, without anti-condensation unit	✓		
AASF65A		750 mm flue gas sampling probe, cable length 3m, maximum temperature 800 °C, without anti-condensation unit	✓		
AASF66A		1000 mm flue gas sampling probe, cable length 3m, maximum temperature 1200 °C, without anti-condensation unit	✓		
AASF31		180 mm flue gas sampling probe, cable length 3m, maximum temperature 400 °C	✓	✓	✓
AASF32		300 mm flue gas sampling probe, cable length 3m, maximum temperature 600 °C	✓	✓	✓
AASF35		750 mm flue gas sampling probe, cable length 3m, maximum temperature 600 °C	✓	✓	✓
AASF36		1000 mm flue gas sampling probe, cable length 3m, maximum temperature 1200 °C	✓	✓	✓
AASL05A		300 mm flue gas sampling probe, cable length 2m, maximum temperature 130 °C, without anti-condensation unit	✓		

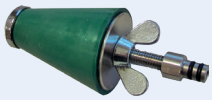
Modular Probes

CODE	PHOTO	DESCRIPTION	CHEMIST 600/600 BG	CHEMIST 900	CHEMIST 900 RACK
AASJ07		Flue gas suction probe handle for CHEMIST analyzers, without tip - cable length: 1.8 meters	✓		
AASJ08		Flue gas suction probe handle for CHEMIST analyzers, without tip - cable length: 3 meters	✓		
AJPT01		180 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 400°C	✓	✓	✓
AJPT02		300 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 600°C	✓	✓	✓
AJPT03		750 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 800°C	✓	✓	✓
AJPT04		1000 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 1200°C	✓	✓	✓
AJPT05		300 mm interchangeable tip for handle: AJSJxx and AASJxx, maximum temperature 160°C	✓	✓	✓

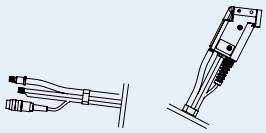
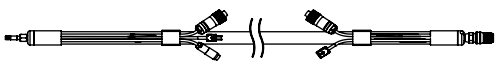
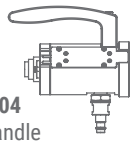
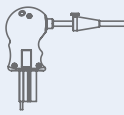
Printers and Consumables

CODE	PHOTO	DESCRIPTION	CHEMIST 600	CHEMIST 600 BG	CHEMIST 900
AARC10		Long life plain thermal paper roll 57x30	✓	✓	✓
AAST04		Thermal printer with Bluetooth connection		✓	

Accessories for Residential Applications

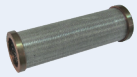
CODE	PHOTO	DESCRIPTION	CHEMIST 600/600 BG	CHEMIST 900	CHEMIST 900 RACK
AACKP01		Pressure Differential measurement kit 2 x 1 m hoses + fittings	✓	✓	✓
AACTO01		Silicone conical fitting 44 - 22 mm	(for tightness test)		
AACTO02		Silicone conical fitting 32 - 18 mm	(for tightness test)		
AAKT05		Kit for tightness test with 4 ways manifold, manual pump, 100 ml syringe, hoses, 1 silicone conical fitting	✓	✓	
AARA01		Threaded 9 mm diameter fitting, 1/4” gas coupling, 1/4” to 1/8” gas nipple	(for tightness test)		
AARA02		Gas valve hose adapter: d.i. 7 mm	✓		
AASA08		Outdoor air temperature 200 mm TcK probe, with 2 m cable	✓		
AATT01		“L”shaped Pitot Tube. 300 mm length, 6 mm external diameter. Without thermocouple	✓	✓	✓
AATT02		“L”shaped Pitot Tube. 800 mm length, 6 mm external diameter. Without thermocouple	✓	✓	✓

Accessories for Industrial Applications

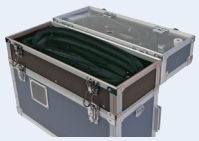
CODE	PHOTO	DESCRIPTION	CHEMIST 600/600 BG	CHEMIST 900	CHEMIST 900 RACK
AACEX01		3 m extension cable for flue gas probe (code AASFxxx)	✓	✓	✓
AAEX04		25 m extension cable for flue gas probe (code AASFxxx)	✓	✓	✓
AAPM02		Bacharach hand Pump for carbon measurements	✓	✓	✓
AACE01		Active external cooler, compatible with AASFxx and AJSJxx probes	✓		
AACP01		External unit for passive sample treatment, for NO2 and SO2 measurement, compatible with AASJxx probes.	✓		
Automatic Carbon Measurement Probe  **AASY01:** Handle with 3,5m cable +  **AAPT04** 750 mm Rigid Tip				✓	
Probe with electro-heated head and tube  **AATR01** Electro-heated 3m cable, with thermocouple +  **AAHH04** Probe handle with heated head +  - **AAPT01**: 300mm Rigid Tip - **AAPT02**: 1000mm Rigid Tip **				✓	
Accessories for industrial measurements, high temperatures and particularly dirty smokes  **AAxxx** Gas Analysis Probe +  * **AACTA03A** Water Trap +  **AASP01** Guard shield +  **AAFS02** Stainless steel filter with adapter			✓	✓	✓
AATL01		S probe with clamp for 8mm tips, for use on waste systems	✓	✓	✓

* : If not included in the probe AASFxxx
** : compatible only with AATR01 cable

Spare Replacement Parts

CODE	PHOTO	DESCRIPTION	CHEMIST 600/600 BG	CHEMIST 900	CHEMIST 900 RACK
AAPB01		Rechargeable Li-Ion battery, 3,7 V, 4,8 Ah	✓		
AAPB12		Rechargeable Li-Ion battery; 11,6V - 6200mAh		✓	
AAKA02		Power Adapter with international plug, USB A / USB B with 2 m cable	✓		
AACFA01		Fine dust filters for AACTA03 (5 pcs. package) Dimensions 12x32 mm	✓		
AACTA03A		Water trap with dust filter, stainless steel fittings and silicon hose suitable for all combustion analyzers	✓		
AAFA02		Spare Part Filter; dimensions 12x57mm; (2PCS)		✓	✓
AAFA03		HDPE filter for industrial engine probe (2PCS); dimensions 12x32mm; suggested use for NH3 measurements with passive probes	✓		
AAFA04		HDPE filter for industrial engine probe (2PCS); dimensions 12x57mm; suggested use for NH3 measurements with passive probes		✓	✓
AAFS01		Inox filter for industrial engine probe; dimensions 12x57mm (AAFS02 Spare Part)	✓	✓	✓

Case, Holster and Accessories

CODE	PHOTO	DESCRIPTION	CHEMIST 600/600 BG	CHEMIST 900	CHEMIST 900 RACK
AACR10		Hard plastic kit case	✓		
AASM06		Rubber holster	CHEMIST 600		
AASM10		Rubber holster	CHEMIST 600 BG		
AAEB01		Trunk Extension - Chemist 900		✓	
AATY01		Trolley for Trunk - Chemist 900		✓	

Calibration Certificates

COD	DESCRIPTION
CER012	ISO 9001 calibration certificate for 2 sensors analyzers (*)
CER013	ISO 9001 calibration certificate for 3 sensors analyzers (*)
CER014	ISO 9001 calibration certificate for 4 sensors analyzers (*)
Calibration certificates on analyzers with more than 4 sensors can be performed by request	

To ensure your and your customers' safety, please remind that current regulation of many Countries imposes that all measuring instruments must be calibrated by a lab and certified every 12 months.

UNI 10389-1:2009 – Combustion analyzers

UNI 11137:2019 – Manometers and analyzers in use also for gas plants leak tests

UNI 10845:2018 – Manometers and analyzers in use also for open chamber boilers draft

(*) Chemist 900 and Chemsit 900 Rack Analyzers are excluded

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