

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



**Seitron Smart Analysis
Windows 10**



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
- 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 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 (CO ₂ /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:	100 .. 260V~ or Li-ion battery pack with internal protection circuit, rechargeable. With mains cable with IEC C14 socket.
Battery charge:	8 hours from 0% to 90%.
Charging time:	10 hours of continuous operation (except printer and Peltier cell group).
Instrument battery life:	2 hours with Cooler working.
Display:	Backlit TFT graphical colour display. 4.3" 480×272 pixel.
<u>Connectivity</u>	
Communication port:	TYPE B USB connector.
Bluetooth:	Communication distance: <100 meters (open field).
Autozero:	Automatic autozero cycle with gas sampling probe in stack.
Dilution:	CO sensor measurement range expansion system up to 100,000ppm (10.00%). Starting point programmable by the user.
Gas measurement sensors:	Up to 9 sensors, configurable among electrochemical, NDIR (single cell) and Pellistor.
Infrared bench:	
Fuel type:	3 gases NDIR bench: CO, CO ₂ , C _x H _y . 12 preprogrammed gases and 16 others programmable by the user.
Self diagnostics:	Check all functions and internal sensors with status indication.
Temperature measurement:	TcK double input with mini connector (ASTM E 1684-96) for Temperature Differential measurement (supply and return).
Environment temperature measurement:	Via internal sensor or via T2 TcK input with remote sensor.
Printer:	Integrated, thermal, with easy paper loading and paper level sensor.
Printer power supply:	Analyzer batteries.
Printer battery life:	With fully charged batteries up to 40 analysis reports.
Internal Data Memory:	16.000 complete data analysis, time and customer's name can be stored.
User data:	8 programmable user names.
Printer header:	6 lines × 24 characters, user customizable.
In-line filter:	With replaceable cartridge, 99% efficiency with 20µm particles.
Vacuum pump:	2.0 l/min flow rate in the stack up to 300hPa head.
Capacity pump:	Internal sensor measuring pump flow rate.
<u>Cooler sample treatment</u>	
Drying system:	Rapid water condensation using cyclone system
Type:	Peltier cell
Set point temperature cooler:	+5°C
Max. temp. deviation from set point:	+10°C from set point
Condensate emptying pump:	Peristaltic hose 38 ml/min
Peristaltic duty cycle pump:	30s On .. 30s Off
Warm-up time:	~ 15 .. 20 minutes
Operating temperature:	-5°C .. +45°C
<u>Anti-condensation trap</u>	
Type:	Integrated
Condensate emptying pump:	Peristaltic hose 38 ml/min
Operating temperature:	-5°C .. +45°

Carbon black: Tightness test (where required): Condensing boiler efficiency : Ambient gases:	Using a manual external pump; the smoke index can be uploaded and printed. 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. Automatic assessment of the condensing boiler, with calculation and printing of the boiler efficiency. Separate measurement and printing of the ambient CO concentration.
Working temperature: Storage temperature: Humidity limit: Protection level: External dimensions: Weight:	-5°C .. +45°C -20°C .. +50°C 20% .. 80% RH IP21 50W x 36H x 20D cm. 50W x 46H x 13D cm with intermediate drawer for heated head and sensor transportation. ~ 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:	<ul style="list-style-type: none"> • 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	1 ppm	< 10 sec
		2500 .. 100000 ppm (10% Vol)	10 ppm	
		100000 .. 500000 ppm (50% Vol)	100 ppm	
CO2	NDIR	0 .. 50 % Vol	0,1 % Vol	< 10 sec
CH4 *	NDIR	0 .. 100 % Vol	1 ppm	< 10 sec
HC (C3H8)*	NDIR	0 .. 30000 ppm	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)


