seitron

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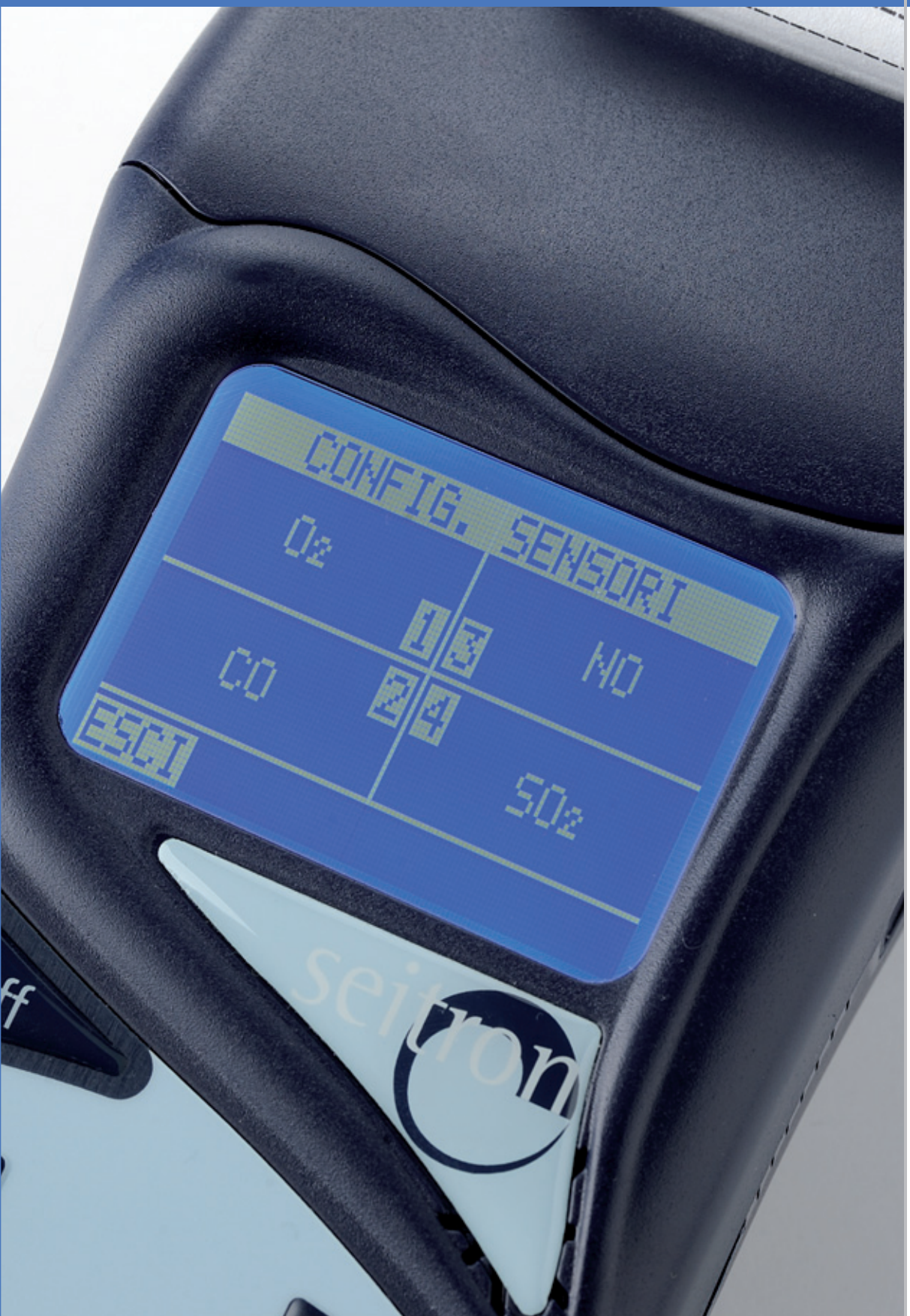
EFFICIENCY • AIR QUALITY • EMISSIONS • PRECISION

NEW 4 SENSORS FLUE GAS ANALYZER

# CHEMIST




**Up to 4 gas sensors for measurement of:**

- 02
- CO (H2 compensated)
- NO
- NO2
- SO2

**Also measured:**

- Flue gas Temperature
- Outdoor air temperature
- Room temperature
- Differential temperature
- Draft and differential pressure
- Ambient CO and NO

**Calculated Values:**

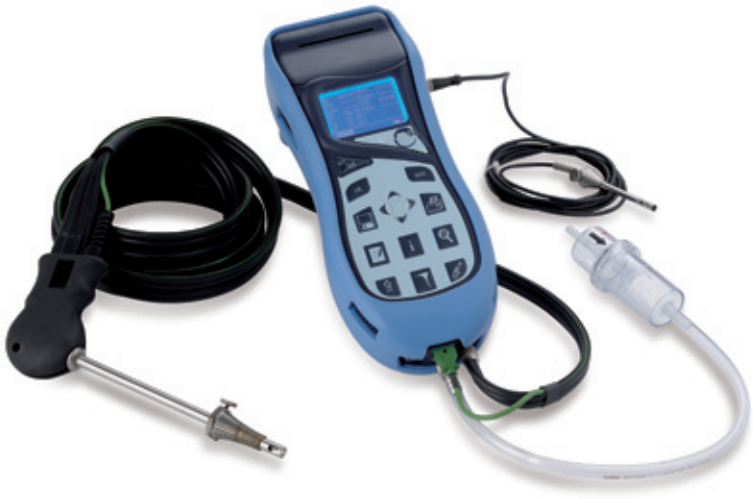
- CO2
- NOX
- Boiler efficiency
- Excess air
- Heat stack loss

**Additional features:**

- Gas piping tightness test
- High accuracy draft measurement
- Firmware updates available for free from Seitron website: www.seitron.it

# CHEMIST 400

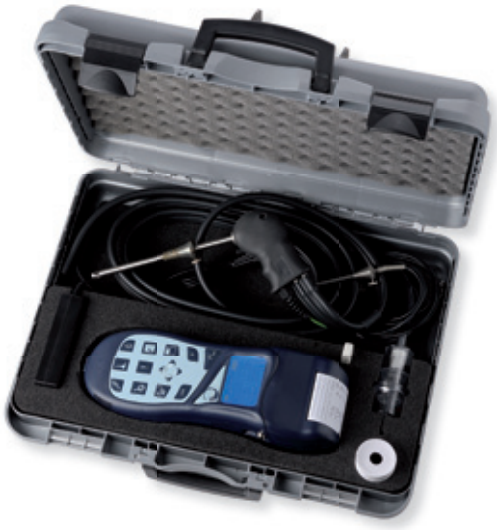
New 4 sensor flue gas analyzer



## Main Features

- Compliant with EN 50379-1
- Up to 4 measurement cells: O2, CO/H2, NO, NO2 and SO2
- CO measurement cell with 1 ppm resolution and built in NOX/SOX filter
- Precalibrated gas sensors, field replaceable
- Flue gas and outdoor air temperature measurement
- Draft and differential pressure measurement
- Boiler efficiency calculation
- Automatic detection of condensing boiler with efficiency calculation
- CO2, heat stack loss, excess air calculation
- Ambient CO and NO measurement
- Gas pipe tightness test
- High accuracy (± 0.5 Pa) and resolution (0.1 Pa) draft measurement with external accessory
- 3 consecutive analysis with average calculation and result printout
- Built in impact printer on plain paper (non thermal)
- Internal memory for 300 analysis
- Big blue (42 x 60 mm) graphic LCD backlit with zoom feature
- Rechargeable Lithium Ion batteries
- External Charger/Power Supply with AC plug
- Recharging time: 2 hrs. up to 90%
- Up to 15 hrs. autonomy of continuous operation (no printouts)
- Up to 40 analysis autonomy (with printouts)
- Additional dilution pump for CO cell auto range, measurement up to 50,000 ppm
- Automatic Autozero with sampling probe in the stack
- PC software on USB pendrive and USB cable for unlimited data storage on PC
- Optional Bluetooth communication
- Self diagnostic function with alarms on gas sensors end-of-life
- 180, 300, 750 mm flue gas sensor probes
- 220 mm flexible flue gas sensors sampling probe
- External condensation trap and dust filter
- Unbreakable stainless steel probe and hose connections
- 7 preprogrammed fuels, including pellets and wood
- 9 additional programmable fuels
- 7 different languages preprogrammed
- Neoprene magnetic holster
- User manual and calibration certificate
- Dimensions 307x105x96 mm, weight 1,1 Kg.

# CHEMIST 400 KITS



- CHEMIST 400N (O2, CO/H2, NO, NO2) with built in impact printer, rechargeable Li-Ion batteries and dilution pump
- CHEMIST 400S (O2, CO/H2, NO, SO2) with built in impact printer, rechargeable Li-Ion batteries and dilution pump
- Both Kits feature also: hard ABS case, power supply with plug, 300 mm flue gas sampling probe with 3 mts hose, water trap with dust filter, Pt 100 outdoor air temperature sensor, differential pressure kit, neoprene holster with magnets, printer paper roll, USB pendrive with software, USB PC connection cable, user manual and calibration certificate

| Code | Accessories and spare parts |
|---|---|
| **AACAL04** | Mains adaptor 100-240V~ / 12VDC 2A 24W |
| **AACCA01** | Car adapter.IN.10-30Vdc OUT.12Vdc |
| **AACCR01** | Rigid plastic case 482x375x160mm |
| **AACCT01** | Shoulder bag for CHEMIST |
| **AACCV01** | PVC cable Schuko plug 10A+earth |
| **AACDP01** | Pressure Probe for fine draught measurement |
| **AACEX01** | 3m extension cable smoke probe |
| **AACFA01** | Dust filter X AACTA01 |
| **AACKP01** | Kit for differential pressure |
| **AACKT02** | Tightness test Kit |
| **AACNI01** | Printer ink ribbon |
| **AACPB06** | Li-Ion battery pack 7.2V 2.2Ah 4/3AF |
| **AACPM01** | Manual pump for soot |

| Code | Accessories and spare parts |
|---|---|
| **AACRC01** | Printer paper roll |
| **AACSA04** | Air temp. Probe Pt100 |
| **AACSE11** | Flex-sensor O2 |
| **AACSE12** | Flex-sensor CO/H2 |
| **AACSE10** | Flex-sensor NO |
| **AACSE13** | Flex-sensor SO2 |
| **AACSE14** | Flex-sensor NO2 |
| **AACSF21** | Smoke sampling probe 180 mm SEITRON |
| **AACSF22** | Smoke sampling probe 180 mm SEITRON |
| **AACSF25** | Smoke sampling probe 750mm 1100°C |
| **AACSL02** | Flexible smoke sampling probe 220mm |
| **AACSM03** | Rubber magnetic holster |
| **AACTA03T** | Complete combined filter + connector |

Smoke sampling probe

Rubber magnetic holster

Tightness test kit

Pressure Probe for fine draught measurement

## WARRANTY

- Chemist Analysers offer 2 years warranty, including gas measurement cells which can be easily replaced by the user.
- With initial extra price it is possible to lengthen warranty term of 1 or 2 years, up to maximum of 4 years.

## CALIBRATION CERTIFICATE

- Chemist Analysers are supplied with calibration certificate, 1 year validity.
- Customer may buy calibration certificates in each following year.

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# CHEMIST 400 - Summary table

| Measurement | Sensor | Range | Resolution | Accuracy |
|---|---|---|---|---|
| O2 | Electrochemical sensor | 0 .. 25.0% vol | 0.1% vol | ±0.2% vol |
| CO<br>H2 compensation | Electrochemical sensor | 0 .. 8000 ppm | 1 ppm | ±10 ppm 0 .. 200 ppm<br>±5% measured value 201 .. 2000 ppm<br>±10% measured value 001 .. 8000 ppm |
| CO diluted | Electrochemical sensor | 0.15 .. 5.00% vol | 0.01% vol | ±20% measured value |
| NO | Electrochemical sensor | 0 .. 5000 ppm | 1 ppm | ±5 ppm 0 .. 100 ppm<br>±5% measured value 101 .. 5000 ppm |
| NOX | Calculated | - | - | - |
| SO2 | Electrochemical sensor | 0 .. 5000 ppm | 1 ppm | ±5 ppm 0 .. 100 ppm<br>±5% measured value 101 .. 5000 ppm |
| NO2 | Electrochemical sensor | 0 .. 1000 ppm | 1 ppm | ±5 ppm 0 .. 100 ppm<br>±5% measured value 101 .. 1000 ppm |
| CO2 | Calculated | 0 .. 99.9% vol (1) | 0.1% vol | - |
| Air temperature | Pt100 sensor | -20.0 .. 120.0 °C | 0.1 °C | ±0.5 °C (2) |
| Flue gas temperature | TcK sensor | -100.0 .. 1250.0 °C | 0.1 °C | ±0.5 °C 0 .. 100 °C<br>±0.5% measured value 101 .. 1250 °C (3) |
| Pressure<br>(draught & differential) | Piezoelectric sensor | -10.00 .. 200.00 hP(4) | 0.01 hPa | ±1% measured value -10.00 .. -2.01 hPa<br>±2 Pa -200 .. 200 Pa<br>±1% measured value 2.01 .. 200.00 hPa |
| Differential<br>temperature | Calculated | 0 .. 1250.0 °C | 0.1 °C | - |
| Air index | Calculated | 0.00 .. 9.50 | 0.01 | - |
| Excess air | Calculated | 0 .. 850 % | 1 % | - |
| Stack loss | Calculated | 0.0 .. 100.0 % | 0.1 % | - |
| Efficiency | Calculated | 0.0 .. 100.0 % | 0.1 % | - |
| Efficiency<br>(condensing) | Calculated | 0.0 .. 120.0 % | 0.1 % | - |
| Smoke index | External instrument | 0 .. 9 | - | - |

Display

Electrochemical sensor

All data relative to concentration accuracies are referred to an instrument operating at a constant temperature within the correct operating range (-5°C .. +45°C), being in operation for at least 15 minutes, powered by its internal battery and after completion of auto-zero procedure.

Notes: (1) The maximum $CO_2$ value displayed depends on the type of fuel.
(2) Stated precision includes error of the external sensor RTD Pt100 class A DIN 43760 (1980).
(3) Stated precision includes error of the external sensor type K thermocouple class 1 IEC584.
(4) Pressures greater than 750 hPa may permanently damage sensors or impair their characteristics.