



UniGas 3000+ XL



Advanced Combustion Flue Gas Analyser

The most powerful and advanced palmtop analyser: up to 4 sensors!



3+3=6 YEAR WARRANTY
SENSORS + INSTRUMENT
EXTENDED LIFE SENSORS

FLUE GAS ANALYSER

10 INSTRUMENTS IN 1:

- 1 Combustion Flue Gas Analyser
- 2 NO/NO_x Emissions
- 3 SO₂ Emissions
- 4 Draft & Differential Pressure Meter
- 5 2 Channel Differential Thermometer
- 6 Ambient CO Monitor (Room Test)
- 7 Gas Network Leak Tightness Tester
- 8 Gas Leak Detector
- 9 Ionization Flame Tester
- 10 Temperature & Humidity Meter

Built-in Impact Printer (Not Thermal!) **NEW**

>10h Operation with Li-Ion Battery Pack

Smart Autozero without Removal the Probe **NEW**

CO Dilution up to 10%

Stores up to 250 Complete Analysis with Customer Name and Address

Graphic Display with Menu and Zoom Feature **NEW**

USB & RS232 interface with Window Software



EN 50379-2
(O₂ and CO-H₂)
Compliant

LOW
NO_x
0.1 ppm



- O₂
- CO₂
- CO
- NO_x
- SO₂
- Efficiency
- Excess Air
- Differential Pressure
- Tair Tgas
- CO/CO₂ ratio
- Ambient CO Monitor
- Gas Leak Detector
- T+RH% Probe

NEW Magnetic Rubber Holster Included!



Designed to meet BS7927, BS7967, TUV, ISO, Gastec QA Criteria, GOST, Qualigaz, and UNI 10389
All descriptions are related to a fully optioned instrument. See last page for the different configurations.



Multifunction Unit for Complete Maintenance of Your Boiler

One Instrument with Many Functions

The UniGas 3000+ provides the latest technology in flue gas analysis. One instrument with many features:

- up to 4 gas sensors;
- autozero valve for quick start-up
- CO sensor with automatic protection;
- built-in impact printer;
- water, air and surface temperature measurements;
- draft, gauge and differential pressure measurements;
- searching for presence and location of gas leaks;
- operator safety with ambient CO continuous monitoring;
- ambient temperature and relative humidity measurements.
- IRDA output for Pocket PC data transfer.

Easy replaceable gas sensors

UniGas 3000+ uses extended life, low maintenance sensors replaceable by the user.

CO sensor dilution

An automatic device protect the CO sensor in presence of high CO level. The measuring range will increase up to 10% CO.

Advanced Diagnostic

Built-in flow meter with internal leak test. Diagnostic errors on sensor with current indication.

Autozero valve for quick start-up

You can install the probe in the stack immediately during the autozero. The instrument will be ready in less then 60 seconds.

Standard Report of Calibration

Each instrument is factory calibrated and certified against Eurotron Standard to ensure traceability, and shipped with a Report of Calibration.

Li-Ion Rechargeable battery

Lithium Ion rechargeable batteries provide longer field use free from memory effect and total discharge. Flue gas analyser and internal printer is powered by a unique battery pack. Charger is supplied as standard.

Keyboard & Display

Text, menu, and keyboard available in most common languages (not icons) for simple and intuitive operations. Engineering units are selectable by

keyboard. The large backlight graphic LCD can display 3, 6 or 12 values per page (ZOOM function) or with bargraph format.

Multi Fuel selection

UniGas 3000+ provides up to 10 fuels for calculating combustion values. Most used fuels for your country are pre-loaded from factory. Others fuels can be added using GasConfig PC software.

Built-in impact printer

The instrument has an optional internal and rugged printer. It uses a low cost common roll of paper. Certainly more readable, long time and heat resistant than the thermal printout on chemical paper.

Pressure/Draft input

Differential pressure input to verify: low pressure, draft, gas pipework leak with pressure decay programme, pressure in gas pipework, pressure in combustion chamber, P on filters and fan, pressure switches calibration.

Smoke index

Smoke index measurement is performed by using the optional external hand pump. The results can be stored in the internal memory and printed on the report.

Gas sampling probe

Flue gas sampling probes, with different lengths and shapes, are available to match each specific requirement. The sampling probe is connected to the instrument with a single or dual hose through a water trap and a suspended particle filter.

Combustion air temperature probe

A remote Pt100 probe is available for remote combustion air temperature measurement. This probe is strongly recommended mainly in forced air boiler to obtain an accurate efficiency measurement.

Ambient CO safety monitoring Room Test (BS7967)

A procedure can be selected to monitor the CO in ambient air using the internal sensors. An internal program allows the CO max measurement in atmospheric boiler room test with 15 values logging. An external optional probe is also available for continuous surveillance of the ambient and operator safety. Both acoustic and visual alarm are available.

Gas pipework leak test

To check gas pipework for the presence of leaks using a pressure decay program and the internal pressure sensor. The tightness test procedure includes dual report (let by). IGE / UP / 1B compliant.

Gas leak sniffer

The instrument can operate in two ways:

- An **external** probe is available to locate the position of a gas leak. This probe has a flexible stainless steel shaft to reach difficult locations.
- An **internal** optional sensor can be installed inside the analyser to locate the position of a gas leak into the domestic pipe network. The internal pump draws the air from ambient and makes the instrument more sensitive for micro-leaks.

Ionization flame tester

Checks the ionization current in boiler flame control sensor.

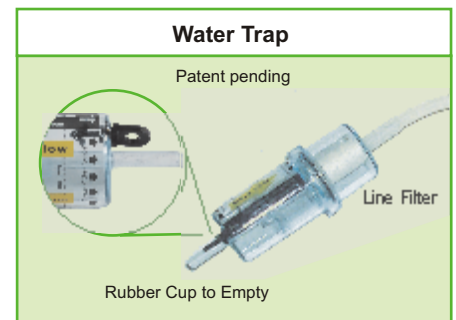
Flash memory

The flash memory allows the instrument to be configured by updating the UniGas firmware for any future legislation requirement or product performance upgrading

Proprietary designed trap

Built-in protection for water suction. External. to prevent risk of sensors damage.

Big water tank capacity for high condensing boiler. Small rubber cup for easy water empty. Long life paper filter.





UniGas 3000+

Providing the Professional Tool for Heating Engineers

Technical Specifications

Type: palm-top combustion gas analyser.

Calibration: automatic calibration procedure at instrument switch-On.

Self-diagnosis: Sensors efficiency test with display diagnostic messages.

Fuel types: Up to 10 selectable from keyboard (most common preprogrammed).

Power supply: High capacity Ni-MH rechargeable battery pack / external battery charger.

Charging time: 3h at 90% with instrument Off.

Battery life: 10 hours (typical) continuous use (without printing & backlit).

Printer: Internal impact type 24 columns with 58 mm paper roll.

Printer power supply: from the analyser battery pack.

Print autonomy: up to 40 reports with full battery (typical).

Printed report header: 4 user programmable lines

Display: graphic black LCD with white lamp.

Flue gas probes: stainless steel shaft with incorporated temperature sensor.

Memory: up to 250 full analysis data structured by boilers (Tags).

Serial communication: standard USB serial interface.

Operating temperature: from -5°C to +45°C

Storage temperature: from -20 to +50°C (3 months maximum at temperatures exceeding the operational limits).

Dimensions: 115x90x330 mm

Weight: 1.1 kg nett. (including battery and printer).

Pa Probe (BB830025)

External 200Pa probe for natural boiler draft measurements, UNI 10845 compliant

Resolution: 0,1 Pa

Precision: ±0,5 Pa (from -10 to +10 Pa); ± 3 Pa otherwise.

Supplied with certificate of calibration.



Parameter	Sensor type	Range	Resolution	Accuracy
O ₂	Electrochemical	0 - 25%	0.1%	±0.1% vol.
CO H ₂ compensated	Electrochemical	0 - 8000ppm	1ppm	±10ppm <300ppm ±4%rdg up to 2000ppm ±10%rdg elsewhere
CO diluted	Electrochemical	8000-100.000ppm	500ppm	
NO	Electrochemical	0 - 4000ppm	1ppm	±5ppm <125ppm ±4%rdg up to 4000ppm
LOW NO	Electrochemical	0 - 500ppm	0.1ppm	<40ppm =±2ppm up to 500ppm =±5%
NO _x	Calculated	0 - 5000ppm		
SO ₂	Electrochemical	0 - 4000ppm	1ppm	±5ppm <125ppm ±4%rdg up to 4000ppm
CO ₂	Calculated	0 - 99.9%	0.1%	
Tair	Pt100	-10 - 100°C	1°C	±(0.2% + 0.15°C)
Tgas	TC K	0 - 1000°C	1°C	±(0.3% + 0.3°C)
T	Calculated	0 - 999°C	0.1°C	
Tflow	TC K	-10 - 100°C	0.1°C	±(0.3% + 0.3°C)
Treturn	TC K	-10 - 100°C	0.1°C	±(0.3% + 0.3°C)
Pressure	Piezo	0 - 200 mbar	0.1mbar	±0.5mbar <50 mbar ±1%rdg >50 mbar
Draft	Piezo	±40.00 hPa	0.01 hPa	±0.03 hPa < 300 Pa ±1% rdg. > 300 Pa
Excess air	Calculated	1.00 - infinity	0.01	or 0 - 250%
Efficiency	Calculated	1 - 99.9%	0.1% (also for condensing boilers with automatic detection)	

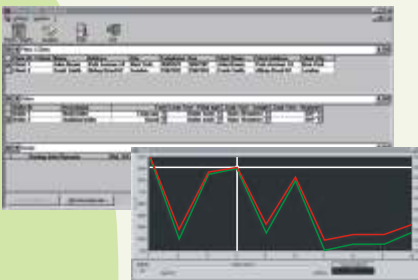
All emission measurements can be displayed with reference to a programmable O₂ value.

Accuracy limits are stated as % of reading. An additional ±1 digit error has to be considered.

The stated pressure relative accuracy is valid only after the zero procedure.

Measuring reading can be directly converted from °C to °F, ppm to mg/Nm³ and from hPa to mmH₂O, mbar, inH₂O.

DBGas 2004 - Boiler Test & Customer Database Manager



UniGas 3000+ XL can store 250 readings structured by boilers and customers.

Using the optional **DBGas 2004** Windows™ software package, you can organize and manage your inspection and maintenance activity.

DBGas 2004 software package includes **GasConfig** Windows™ software. Using the software you can modify the configuration of the instrument.



EE700476

USB standard interface



Modular Design Giving Total Flexibility

Accessories

	<p>BB880028 ABS rigid carrying case</p> <p>BB880033 Aluminium carrying case</p> <p>BB880043 Compact rigid carrying case with shoulder strap. UniGas 2000+, probes, and accessories need 1/3 of the classic carrying case space.</p>
	<p>BB610051 180mm (TGD - Temperature, Gas, Draft) sampling probe</p> <p>BB610046 300mm (TGD - Temperature, Gas, Draft) sampling probe</p>
	<p>EE300086 Differential pressure probe and burner hose kit</p>
	<p>F7828000 Manual pump for smoke index measurements</p>
	<p>BB830006 Pt100 remote air sensor with cone</p>
	<p>BB290031 DC Auto Adapter</p>
	<p>BB830008 Ambient T+RH% probe</p> <p>BB830009 Ambient CO probe</p> <p>BB830010 Gas sniffer probe</p>
	<p>BB830019 Ionization current probe</p>
	<p>F2139000 Pipe Velcro TC K-Type</p>
	<p>F2132100 130mm air TC K-Type</p>
	<p>F2137100 130mm Contact TC K-Type</p>
	<p>F2139100 Tc K-Type Clamp temperature probe</p> <p>F2139200 Pt100 Clamp temperature probe</p>

Ordering Code

cat. 7825 - **A** - **B** - **CC** - **D** - **E** - **F** - **G** - **H**

Each standard package includes: basic unit with two electrochemical sensor, magnetic rubber holster, battery charger, differential pressure sensor, GasConfig & DBGas lite software package, instruction manual, USB cable, Calibration certificate

Table A Sensor n.1

1 O₂ (0-25%)

Table B Sensor n.2

2 CO (0-8000 ppm), H₂ compensated

Table C Sensor n.3 & 4

0 none
4 NO (0-4000 ppm) / NO_x
4LO NO (0-500 ppm)
6 SO₂ (0-4000 ppm)

Table D Sample probes (including water trap and line filter)

0 none
1D 180mm flue gas probe + draft (dual hose) BB610051
3 300mm flue gas probe + draft (dual hose) BB610046
5D 750mm flue gas probe + draft (dual hose) BB610080
6 90mm 90° flue gas or draft (single hose) probe BB610043

Table E Options

0 none
1 Built-in impact printer
6 Electrovalve for autozero quick start-up
7 Internal sensor for gas leak detector

Table F Mains adapter / charger

1 115V ±10% 50/60Hz - USA plug
2 230V ±10% 50/60Hz - Schuko plug
3 230V ±10% 50/60Hz - UK plug
4 230V ±10% 50/60Hz - European plug
5 100V ±10% 50/60Hz - USA/Japan plug

Table G Accessories

1 Software GasConfig + DBGas 2004
3V Vinyl case with shoulder strap
3 ABS carrying case
4 Aluminum carrying case
5 Remote combustion air temperature sensor with 2m cable and positioning cone
7 Differential pressure connection kit (dual hose)
8 External probe for CO operator safety
9 External probe for gas leak detector
B Manual pump for smoke index measurement with filters and comparison table
C External probe for ambient temperature and relative humidity
D External probe for boiler ionization current
E DC Auto battery charger

Table H Report of calibration

1 Eurotron report