ISO 9001 — Quality Granted — Eurotron Instruments

ISO 9001 — GASTEC

UniGas 3000+

eurotron
"Excellence in measurements"

Professional combustion analyser

Multifunction unit for the complete maintenance of your boiler

GAS ANALYSIS

9 INSTRUMENTS IN 1:

1. Combustion gas analyser
2. NO/NO$_X$ & SO$_2$ emissions analyser
3. Draft & differential pressure meter
4. 2 channel thermometer
5. Ambient CO monitor
6. Gas pipework leak tester
7. Gas leak detector
8. Ionization flame tester
9. Temperature & Humidity meter

Built-in impact printer

Rechargeable battery

Easy to use, text and keyboard in any language

Stores up to 250 samples

Graphic display

Upgradable using flash memory

O$_2$

CO$_2$

CO

NO$_X$

SO$_2$

Efficiency

Excess air

Differential pressure

Tair Tgas

CO/CO$_2$ ratio

Ambient CO monitor

Gas leak detector

T+RH% probe

CE

Designed to meet BS7927, TUV, ISO, Gastec QA Criteria, GOST, Qualigaz, and UNI 10389

Eurotron - *One of the world leaders in high technology equipment: portable flue gas analysers - high accuracy calibrators - non-contact IR thermometers.*

Multifunction unit for complete maintenance of your boiler

One instrument with many functions

The *NEW* handheld **UniGas 3000+** provides the latest tecnology in flue gas analysis. One instruments with many features:

- *up to 4 gas sensors;*
- *CO sensor with manual or automatic protection;*
- *built-in impact printer;*
- *water, air, 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.*

Easy replaceable gas sensors
UniGas 3000+ uses long life, low maintenance sensors. Alarm levels with audible buzzer on gases measurement.

CO sensor protection
An automatic device can exlude the CO sensor in presence of high CO level.

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

Rechargeable battery operations
Ni-MH rechargeable batteries provide longer field use. Flue gas analyser and internal printer is powered by a 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.

Proprietary design trap
Patent pending to inhibit water into the instrument. External, to prevent risk of instrument damage. Large water tank capacity for condensation boiler. Small rubber cup for easy water purge. Long life paper 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.

CO ambient monitoring
An external optional probe is 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.

Gas leak sniffer
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.

T+RH ambient monitoring
An external probe is available for temperature and relative humidity (T+RH%) of the ambient for comfort index computation.

Ionization flame tester
Checks the ionization current in 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.

Specifications

- **Type**: palm-top combustion gas analyser with 2, 3 or 4 gas sensors.
- **Calibration**: automatic calibration procedure at instrument switch-On.
- **Self-diagnosis**: Sensors efficiency test with diagnostic messages.
- **Fuel types**: Up to 10 selectable from keyboard.
- **Power supply**: High capacity Ni-MH rechargeable battery pack / external battery charger.
- **Charging time:** 8h at 90% with instrument Off.
- **Battery life**: 6 hours (typical) continuous use (without printing and backlight).
- **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).
- **Service and user information**: 3 programmable lines.
- **Printed report header**: 4 programmable lines
- **Display**: 40x58 mm graphic LCD with backlight device.
- **Flue gas probes**: stainless steel shaft with incorporated temperature sensor.
- **Memory**: up to 250 full analysis data structured by boilers (Tags).
- **Serial communication**: IR serial port. Optional IR/RS232 serial interface adapter.
- **Operating temperature**: from -5°C to +45°C
- **Storage temperature**: from -20 to +60°C (3 months maximum at temperatures exceeding the operational limits).
- **Dimensions and Weight**: 115x90x330 mm - 1.1 kg with battery and printer
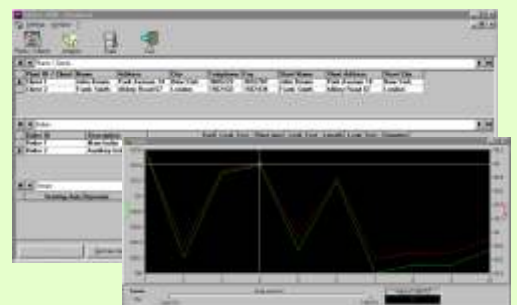
Parameter	Sensor type	Range	Resolution	Accuracy
O_2	Electrochemical	0 - 25%	0.1%	±0.1% vol.
CO H_2<2000ppm comp.	Electrochemical	0 - 8000ppm	1ppm	±10ppm <300ppm; ±4%rdg up to 2000ppm; ±10%rdg >2000ppm
CO	Electrochemical	0 - 20000ppm	1ppm	±10ppm <300ppm; ±4%rdg up to 2000ppm; ±10%rdg >2000ppm
NO	Electrochemical	0 - 4000ppm	1ppm	±5ppm <125ppm; ±4%rdg up to 4000ppm
NO_2	Electrochemical	0 - 1000ppm	1ppm	±5ppm <125ppm; ±4%rdg up to 1000ppm
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/Draft	Piezo	±100.00 hPa	0.01Pa	±3Pa <300Pa; ±1%rdg >300Pa
Excess air	Calculated	1.00 - infinity	0.01	
Gas speed	Calculated	0 - 99.9m/s	0.1m/s	
Efficiency	Calculated	1 - 99.9%	0.1%	
Smoke index	Paper filter method 0 - 9 Bacharach			

- *All emissions measurements are available also with a programmable O_2 reference value.*
- *NO_x concentration can be shown in terms of stack equivalent NO_2.*
- *Accuracy limits are stated as % of reading. Additional ±1 digit error has to be considered.*
- *The pressure accuracy shown is valid only after zero procedure.*
- *Measuring readings can be directly converted from ppm to mg/Nm³ and from hPa to mbar, mmH₂O, inH₂O.*

DBGas 2000 - Boiler test & Customer database manager

UniGas 3000+ can store 250 readings structured by boilers and customers. Using the optional **DBGas2000** Windows™ software package, you can organize and manage your inspection and maintenance activity.

DbGas 2000 software package includes **GasConfig** Windows™ software. With this software you can modify the configuration of the instrument.

Accessories

BB880028
ABS rigid carrying case
BB880033
Aluminium carrying case
BB880043
Compact rigid carrying case with shoulder stap. UniGas 3000+, probes, and accessories need 1/3 of the classic carrying case space.

NEW

BB610051
180mm (TGD - Temperature, Gas, Draft) sampling probe
BB610046
300mm (TGD - Temperature, Gas, Draft) sampling probe

EE300086
Differential pressure probe and burner hose kit

F7828000
Manual pump for smoke index measurements

BB830006
Pt100 remote air sensor with cone

BB290040
DC Auto Adapter
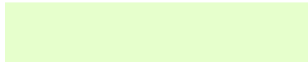
F2139000
Pipe Velcro Tc type K
F2132100
130mm air Tc type K
F2137100
130mm Contact type K Tc

BB830009
Ambient CO probe
BB830008
Ambient T+RH% probe
BB830010
Gas sniffer probe

BB830019
Ionization current probe

Ordering Code

cat. 7823 - A - B - C C - D - E - F - G - H

Table A **Sensor n.1**
1   O_2 (0-25%)

Table B **Sensor n.2**
2   CO (0-8000 ppm)
2X   CO (0-20000 ppm)

Table C **Sensor n.3 and 4**
0   none
4   NO (0-4000 ppm) / NO_x
5   NO_2 (0-1000 ppm)
6   SO_2 (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
7   160mm multipoint flue gas (single hose) probe for atmospheric boilers BB610070

Table E **Options**
0   none
1   Built-in impact printer
3   Gas network leak test procedure with pressure decay programme
4   Graphic display capability (bargraph)
6   Electrovalve for automatic/manual CO exlusion

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**
0   None
1   Software GasConfig + DBGas2000 + IR/RS232 adapter
2   Magnetic plate
3V   Vinyl case with shoulder strap
3   ABS carrying case
4   Aluminum carrying case
5   Remote combustion air temperature sensor with 2m cable and positionning 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 umidity
D   External probe for boiler ionization current
E   Auto adapter battery charger

Table H **Report of calibration**
1   Eurotron report

Specifications may change without notice.

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