

BTU 2000+

Compact Combustion Analyzer

Providing the latest technological analyzer for heating service engineers, gas installers & plumbers

7 INSTRUMENTS IN 1:

- 1 Combustion Gas Analyzer
- 2 Draft & Differential Pressure Meter
- 3 2 Channel Thermometer
- 4 Ambient CO Monitor
- 5 Gas Pipework Leak Tester
- 6 Gas Leak Detector
- 7 Ionization Flame Tester

Built-In Impact Printer

Built-In Gas Sniffer

Rechargeable Battery

Easy to Use, Text and Keyboard in any Language

Stores up to 250 Samples

Windows Software

Upgradable using flash memory



O₂

CO₂

CO

Efficiency

Excess Air

Differential Pressure

Tair
Tgas

CO/CO₂
ratio

Ambient CO
Monitor

Gas Leak
Detector

Designed to meet BS7927, 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.

BTU 2000+

Multifunction Unit for Complete Maintenance of your Boiler

One Instrument with Many Functions

The **NEW** handheld **BTU 2000+** is the most comprehensive gas analyzer available for:

- boiler tuning and maintenance;
- ΔP boiler filters checks;
- pressure switch tuning;
- water, air, surface temperature measurements;
- draft, gauge and differential pressure measurements;
- search for presence and location of gas leaks;
- operator safety with ambient CO and O₂ continuous monitoring.

Easy Replaceable Gas Sensors

BTU 2000+ uses long life low maintenance sensors for O₂ and CO. Alarm levels with audible buzzer on gas es measurement.

Standard Report of Calibration

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

Rechargeable Battery Operations

Ni-MH rechargeable batteries provide longer field use. Flue gas analyzer and internal printer is powered by unique batteries. 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 for US and European standard. The large backlight multi-parameter LCD display is more easy to read.

Multi Fuel Selection

BTU 2000+ 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 is available with or without a built-in rugged impact printer. It uses a low cost common roll of paper. Certainly more readable, long lasting and heat resistant than the thermal printout on chemical paper.

External Cordless HP Printer

You can also remote print using your HP 82240B Infrared printer.

Pressure/Draft Input

Differential pressure input to verify: draft, gas pipework leak with pressure decay programme, gas flow pressure, pressure in combustion chamber, ΔP 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 Sensor

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 Monitoring

The instrument can operate in two ways:
A procedure can be selected to

monitor the CO and the O₂ in ambient air using the internal sensors. An internal program allow the CO max measurement in atmospheric boiler check.

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.

Gas Leak Sniffer

The instrument can operate in two ways: An **external** optional 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 flame control sensor.

Flash Memory

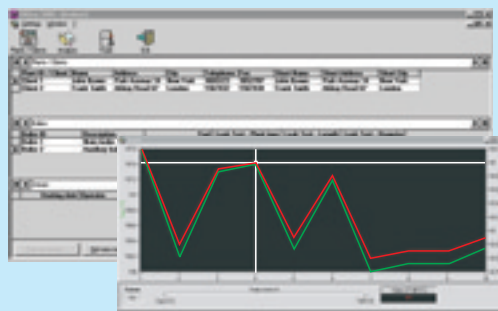
The flash memory allows the instrument to be configured by updating the UniGas firmware for any future legislation requirement or product performance upgrading.

DBGas 2004 - Boiler test & Customer database manager

BTU 2000+ can store 250 readings structured by boilers and customers.

Using the optional **DBGas2004** Windows™ software package, you can organize and manage your inspection and maintenance activity. Select your customer and boiler details from PC and download to your UniGas.

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



BTU 2000+

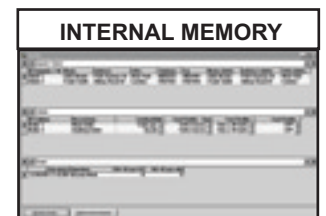
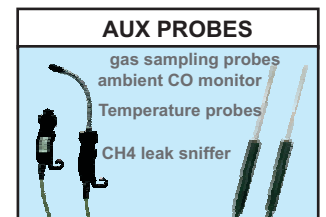
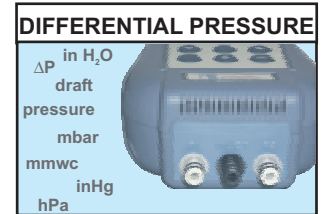
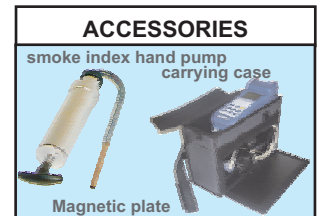
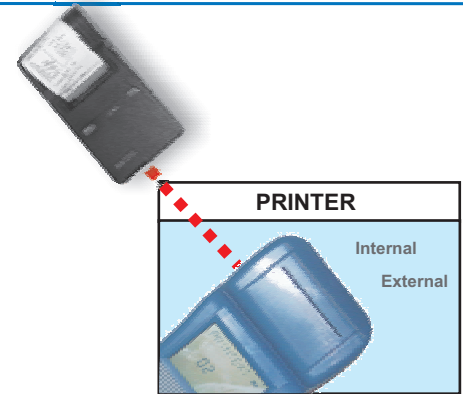
The Most Powerful and Complete Gas Analyzer



Specifications

Specify your requirements

- **Type:** hand-held combustion gas analyzer with 1 or 2 gas sensors.
- **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.
- **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).
- **Memory:** up to 250 full analysis data structured by boilers (Tags).
- **Printer:** Internal impact type 24 columns with 2.3" paper roll (33 ft long).
- **Printer power supply:** from the analyzer battery pack.
- **Print capacity:** up to 40 reports with full battery (typical).
- **Service and user information:** 3 programmable lines.
- **Printed report header:** 4 programmable lines.
- **Display:** 1.6"x2.3" alpha-numeric LCD with backlight device.
- **Flue gas probes:** stainless steel shaft with incorporated temperature sensor.
- **Serial communication:** RS232 serial interface.
- **Infrared port:** compatible with HP82240B cordless printer.
- **Operating temperature:** from 23°F to +113°F
- **Storage temperature:** from -4°F to +140°F (3 months maximum at temperatures exceeding the operational limits).
- **Dimensions and Weight:** 4"x3"x11" - 2lbs. with battery and printer



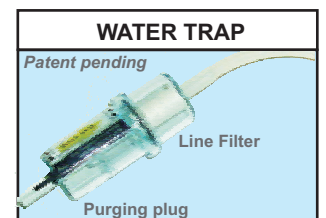
Parameter	Sensor	Range	Resolution	Accuracy
O ₂	Electrochemical	0 - 25%	0.1%	±0.2% vol
CO	Electrochemical	0 - 4000 ppm	1 ppm	±20 ppm <400 ppm ±5% rdg up to 4000 ppm
H ₂ immune level <10%				
CO	Electrochemical	0 - 8000 ppm	1 ppm	±10 ppm <300 ppm ±4% rdg up to 2000 ppm ±10% rdg elsewhere
H ₂ compensated				
CO ₂	Calculated	0 - 99.9%	0.1%	
Tair	Pt100	-10 - 100°C 14.0 - 212.0°F	0.1°C 0.1°F	±0.5°C ±1°F
Tgas	Tc K	0 - 600°C 32.0 - 1110°F	0.1°C 0.1°F	±1°C ±2°F
Differential temp.	Calculated	0 - 999°C 32.0 - 1830°F	0.1°C 0.1°F	
Pressure/Draft	Piezoresistive	-10 - +100hPa	0.01 hPa	±3Pa <300 Pa ±1% rdg. elsewhere
Excess air	Calculated	1.00 - infinity	0.01	
Efficiency	Calculated	1 - 99.9%	0.1%	

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 ppm to mg/Nm³ and from hPa to mmH₂O, mbar, inH₂O.

Consumable parts

EE650011	Filter paper set for smoke index measurements (40 pcs)
EE860004	Smoke index comparison table
EE340006	33 ft paper roll
EE490002	Printer ribbon cartridge
EE650074	Spare filter cartridge

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



BTU 2000+

Modular Design Giving Total Flexibility

Accessories

Ordering Code



BB880028
ABS rigid carrying case
BB880033
Aluminium carrying case
BB880043
Compact rigid carrying case with shoulder strap. BTU 2000+, probes, and accessories need 1/3 of the classic carrying case space.

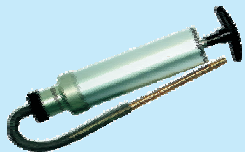
NEW



BB610051
φ0.3" - 7" (TGD - Temperature, Gas, Draft) sampling probe
BB610046
φ0.3" - 11.8" (TGD - Temperature,



EE300088
Pressure probe and burner hose kit (single hose)



F7828000
Manual pump for smoke index measurements



BB830018
Pt100 remote air sensor with cone



BB290031
DC Auto Adapter



F2139000
Pipe Velcro TC type K



F2132100
5" air TC type K



F2137100
5" Contact TC type K



BB830009
Ambient CO probe



BB830010
Gas sniffer probe

BB830019
Ionization current probe

cat. 7822 - A - B - C - D - E - F - G

The standard package includes:
BTU 2000+ base unit with one electrochemical sensor, battery charger, differential pressure sensor, infrared port for HP thermal printer, instruction manual, E Instruments calibration certificate.

Table A Sensor n.1
1 O₂ (0-25%)

Table B Sensor n.2
0 none
2 CO (0-4000 ppm)
2H CO (0-8000 ppm)

Table C Sample probes (including water trap and line filter)
0 none
1L 7" flue gas or draft (single hose) probe BB610047
1 7" flue gas probe + draft (dual hose) BB610051
2 12" flue gas probe + draft (dual hose) BB610046
3 3.5" 90° flue gas or draft (single hose) probe BB610043
4 6.3" multipoint flue gas (single hose) probe for atmospheric boilers BB610070

Table D Options
0 none
1 Gas network leak test procedure with pressure decay programme
2 Internal sensor for gas leak detector
3 External probe for gas leak detector
4 External probe for CO operator safety
6 Software GasConfig + DBGas2000 + RS232 cable
7 External probe for boiler ionization current
8 Remote combustion air temperature sensor with 2m cable and positioning cone
9 Differential pressure connection kit (dual hose)
P Built-in impact printer

Table E 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 F Accessories
0 None
1 Magnetic plate
2 Rubber protective holster with magnetic support
3 Vinyl case with shoulder strap
4 ABS carrying case
5 Aluminum carrying case
6 Manual pump for smoke index measurement with filters and comparison table
7 DC Auto battery charger

Table G Calibration Certificate
1 E-Instruments