

BTU 1000



Innovative Instrumentation Solutions
A unit of E Instruments Group LLC

Basic Combustion Analyser Low cost tool for boiler maintenance

- ▶ **Compact and Ergonomic, fits in your hand**
- ▶ **Easy to Use with Large Multiline Display**
- ▶ **Automatic LCD Backlight**
- ▶ **Built-In Impact Printer Available**
- ▶ **CO with 1 ppm Resolution**
- ▶ **180mm or 300mm Removable Fflue Gas Probe**
- ▶ **Proprietary Design Water Trap**
- ▶ **Draft & Differential Pressure Meter**
- ▶ **Ambient CO Monitoring**
- ▶ **Rechargeable Battery**
- ▶ **Real Time Clock**
- ▶ **IR Output to use your Thermal Printer**



All descriptions are related to full options instrument. See latest page for the different configurations.

Easy Replaceable Gas Sensors

The BTU 1000 uses long life, low maintenance sensors for O₂ and CO.

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 analyser and internal printer is powered by unique batteries.

Charger is supplied as standard.

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 time and heat resistant than the thermal printout on chemical paper.

Pressure/Draft Input

Differential pressure input to verify: draft, gas pipework leak with pressure decay program, 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.

Ambient CO Safety Monitoring

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 checks.

BTU 1000

Basic Combustion Analyser/Boiler Tuning Init

Specifications

- **Calibration:** automatic calibration procedure at instrument switch-On.
- **Self-Diagnosis:** Sensors efficiency test with display diagnostic messages.
- **Fuel Types:** Up to 10 selectables 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 Power Supply:** from the analyser battery pack.
- **Printed Report Header:** 4 programmable lines.
- **Display:** 1.6"x2.3" alpha-numeric LCD with backlight device.
- **Infrared Port:** compatible with HP82240B cordless printer.
- **Operating Temperature:** from 23°F of 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" - 2 lbs with battery and printer



BB880028
ABS rigid carrying case.

BB880033
Aluminium carrying case.

BB880043
Compact rigid carrying case with shoulder strap. BTU 1000, probes, and accessories need 1/3 of the classic carrying case space.

BB610048
300mm (Temperature + Gas) single hose sampling probe

F7828000
Manual pump for smoke index measurements

Ordering code

cat. 7820 - **A** - **B** - **C** - **D** - **E** - **F**

The standard package includes:
BTU 1000 basic unit, battery charger, differential pressure sensor, infrared port for HP thermal printer, rubber holster, 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)

Table C Sample probe
(including water trap and line filter)
1 7" flue gas probe or draft (single hose) BB610047
2 12" flue gas probe or draft (single hose) BB610048

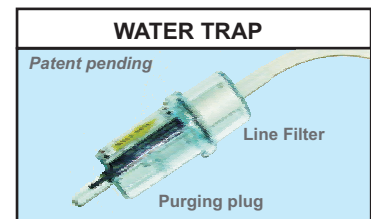
Table D Options
0 none
P Built-in impact printer

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 Calibration Certificate
1 E-Instruments report

Parameter	Sensor	Range	Resolution	Accuracy
O ₂	Electrochemical	0 - 25%	0.1%	±0.2% vol
CO	Electrochemical	0 - 4000 ppm	1 ppm	±5 ppm <125 ppm ±4% rdg up to 4000ppm
CO ₂	Calculated	0 - 99.9%	0.1%	
Tair	Pt100	14 - 212°F	0.1°F	±1°F
Tgas	Tc K	32 - 1100°F	0.1°F	±2°F
Pressure/Draft	Piezo Resistive	-10hPa to 100hPa	0.01 hPa	±1% rdg.
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.



Proprietary design trap
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.