

# ENERAC 500

## Handheld Combustion Efficiency Emissions Analyzer



Distributed by:  
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**O<sub>2</sub>**  
**CO**  
**NO**  
**NO<sub>2</sub>**  
**NO<sub>x</sub>**  
**SO<sub>2</sub>**  
**DRAFT**  
**COMBUSTIBLES (HCs)**

MADE IN THE  
**USA**

**A NEW GENERATION IN HANDHELD COMBUSTION AND EMISSIONS MONITORING**  
*The ENERAC 500 is everything you ever wanted in a low-cost, easy-to-use emissions monitoring system.*

### RUGGED

- Heavy Duty Aluminum Case
- Simple Modular Design
- 2 Year Warranty
- Download Latest Firmware Upgrades from our Website

### COMPREHENSIVE

- Basic O<sub>2</sub>-Efficiency Analyzer
- CO, Combustibles & Draft options
- NO, NO<sub>2</sub> & SO<sub>2</sub> Options
- Expandable Emissions Package
- Thermoelectric Condenser
- Built-in Printer
- Interface Computer Software

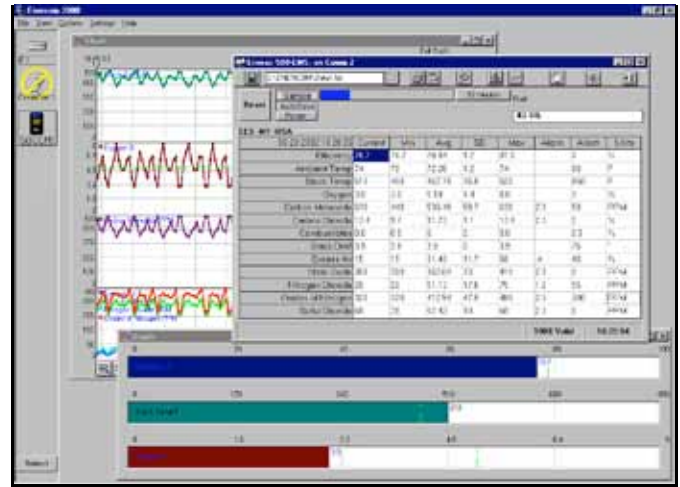
### AFFORDABLE

- Buy Only What You Need and Add Later
- Reduce Testing Costs
- Reduce Energy Costs
- Receive a Generous Trade-In Allowance on your old analyzer.
- No-charge Loaners Available

ENERAC™ invented the first electronic portable multi-parameter combustion analyzer in 1979 (in the U.S.A.). ENERAC™ still services this analyzer today as well as all others ENERAC has manufactured. The ENERAC™ Model 500 is a low-cost, easy to use (no technical expertise needed, etc.) portable combustion efficiency emissions analyzer.

The ENERAC™ 500 is perfect for both determining the efficiency of a combustion source as well as collecting advanced emissions data for internal use or for local, state and federal emissions reporting requirements (a compliance-level portable combustion analyzer). The ENERAC™ 500 is perfect for testing various combustion sources, such as boilers, burners, engines, turbines, generators, kilns, dryers, heaters and ovens, just to name a few. Equally, with a simple combustion efficiency test or a more advanced combustion emissions test, the ENERAC™ 500 is designed to provide years of trouble-free service. It is flexible enough to be tailored to meet your specific needs, yet simple enough to be completely maintained in the field. Advanced design, rugged construction and an impressive array of options are its hallmark. Constructed as a field workhorse, the ENERAC™ 500 can be upgraded at any time (adding options to the same unit) to meet your changing needs.

The ENERAC™ 500 provides a comprehensive range of automatic emissions calculations (grams/brake horsepower hour; pounds/million Btu) advanced enercom windows software, two way communications and factory support. From low NO<sub>x</sub> burners (0.1 ppm NO<sub>x</sub> resolution) to large rich burn engines (5,000ppm NO<sub>x</sub>/20,000ppm CO,) the ENERAC™ 500 is designed to help you meet your needs of various monitoring applications at an affordable price.



ENERCOM WINDOWS SOFTWARE

**MODEL 500 SPECIFICATIONS**

**PHYSICAL:**

1. CASE: 9.75" x 4" x 2.75"  
Aluminum case with magnetic support. Weight: 3 lbs.
3. PROBE: 9" L x 3.8" OD (other lengths available)  
Inconel steel stack probe. Probe housing connects to instrument via a 10 ft. Viton hose (other lengths available) and water trap and thermoelectric condenser. Maximum continuous temperature: 2000 F.

**ELECTRICAL POWER:**

1. BATTERY: 4-6 VDC. Rechargeable NiMH (included) or 4 disposable AA alkaline cells. Approx. 6-8 hours operating time (1.5 hours with T-cooler)
2. AC Charger: 120/240v. 60/50 hz. 9vdc output

**DISPLAY:**

Four line by 16 character Liquid Crystal Display with backlight illumination.

**PRINTER:**

Internal 2" thermal printer.

**DATA STORAGE:**

Internal: 400 individually selectable buffers hold one complete set of measurements each in non-volatile memory. Buffer contents can be sent to printer or serial port. Data is stored by pressing the STORE key or automatically on a periodic basis.

**COMMUNICATIONS:**

Serial Port (RS-232C port) settings: 9600,N,8,1  
USB Port  
Bluetooth Wireless (Class 1 – 100m)

**FUELS:**

15 Fuels: #2 Oil, #4 Oil, #6 Oil, Natural Gas, Anthracite, Bituminous, Lignite, Wood (50% H<sub>2</sub>O), Wood (0% H<sub>2</sub>O), Kerosene, Propane, Butane, Coke Oven Gas, Blast Furnace & Sewer Gas. Custom fuels available on request or by customer programming using ENERCOM software

**ENERAC 500 PRINTOUT**

ENERAC M500  
Serial #: 000000  
Company Name  
  
Time: 12:00:00  
Date: 01/31/03  
  
Fuel: #2 OIL  
  
Effic: 79.5 %  
Amb Temp: 75 F  
Stack T: 425 F  
Oxygen: 6.0 %  
CO: 490 PPM  
CO2: 11.2 %  
Combust: 0.2 %  
Draft: 3.5 "  
Ex.Air: 37 %  
NO: 325 PPM  
NO2: 60 PPM  
NOX: 385 PPM  
SO2: 40 PPM  
Oxygen Ref:TRUE

MEASURED PARAMETERS	RANGE	RESOLUTION	ACCURACY
1. AMBIENT TEMPERATURE Type RTD	0-150°F	1°F or C	+/- 2°F M
2. STACK TEMPERATURE(Net) Type K Thermocouple	0-2000°F (1100°C)	1°F or C	+/- 2°F M
3. OXYGEN (O <sub>2</sub> ) Electrochemical Cell	0-25%	0.1%	+/- 0.2% M
4. CARBON MONOXIDE (CO) Electrochemical Cell	0-500 0-2000 or 0-20000PPM	1 PPM	+/- 0.2% M**
5. NITRIC OXIDE (NO) Electrochemical Cell	0-300 0-2000 or 0-4000 PPM	0.1 PPM 1 PPM 1 PPM	+/- 0.2% M**
6. NITROGEN DIOXIDE (NO <sub>2</sub> ) Electrochemical Cell	0-500 or 0-1000 PPM	0.1 PPM 1 PPM	+/- 0.2% M**
7. SULFUR DIOXIDE (SO <sub>2</sub> ) Electrochemical Cell	0-2000 PPM	1 PPM	+/- 0.2% M**
8. COMBUSTIBLES Catalytic Sensor	0-5%	0.1%	+/- 0.2%(CH4)M
9. STACK DRAFT	+10" to 40" WC	0.1° WC	+/- 0.2% M
10. SMOKE TEST	ASTMD method D2156		
COMPUTED PARAMETERS	RANGE	RESOLUTION	ACCURACY
1. COMBUSTION EFFICIENCY	0-100%	0.1%	+/- 1%
2. CARBON DIOXIDE (CO <sub>2</sub> )	0-40%	0.1%	+/- 2%
3. EXCESS AIR	0-1000%	1%	+/- .2%
4. OXIDES OF NITROGEN (NO <sub>x</sub> )	0-800 0-3000 0-5000 PPM or other	0.1 PPM 1 PPM 1 PPM	+/- 4%
5. POUNDS / MILLION Btu (CO, NO, NO <sub>2</sub> , SO <sub>2</sub> )	0-99.99 #/mBtu	0.01 #/B	+/- 2%
6. GRAMS / BRAKE-HP-HR (CO, NO, NO <sub>2</sub> , SO <sub>2</sub> )	0-99.99/bhp-hr	0.01g/bhp-hr	+/- 2%

Oxygen Correction factor for emissions adjustable 0.20% in 1% steps plus TRUE.  
\*Accuracy (M: Measured) When calibrated prior to use per ENERAC™ specifications.  
\*\*+/- 1 to 2 ppm for less than 100 ppm range  
Note: Other sensor ranges available for parameters of interest  
H2S sensor (0-200ppm) Can be substituted for another sensor slot!



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