

# ENERAC™ 400 EMS

## Micro Emissions Monitoring System



### **A NEW GENERATION IN EMISSIONS MONITORING**

The ENERAC™ 400 EMS is everything you ever wanted in a low-cost, easy-to-use emissions monitoring system.

#### **RUGGED**

Trouble-free Operation

- Heavy Duty Aluminum Case
- Simple Modular Design
- 2 Year Warranty
- Best Support in the Industry

#### **COMPREHENSIVE**

Meets Your Every Need

- Basic NO Analyzer
- Comprehensive Emissions Data (NO, NO<sub>2</sub>, SO<sub>2</sub>, CO, O<sub>2</sub>, etc.)
- Advanced Data Management

#### **AFFORDABLE**

Pays For Itself

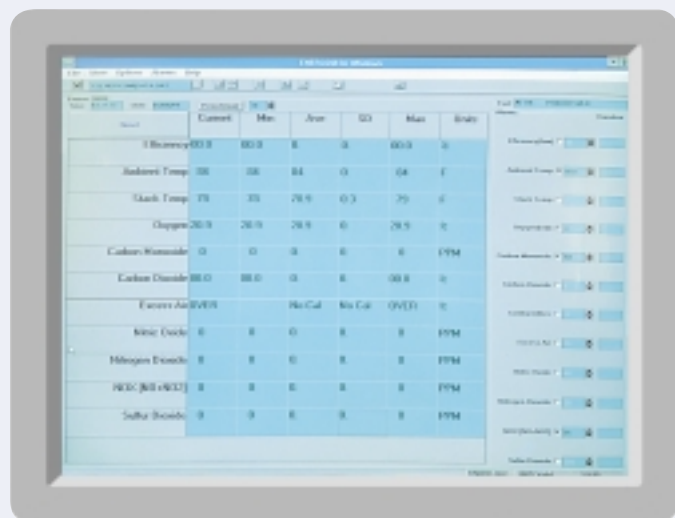
- Buy Only What You Need
- Reduce Testing Costs
- Reduce Energy Costs
- Reduce Training Costs
- Improve Your Bottom Line

For continuous technical updates, visit our web site at: [www.enerac.com](http://www.enerac.com)

The ENERAC™ 400 EMS is a low-cost micro-emissions monitoring system utilizing standard electro-chemical sensors. It is designed to help you meet the challenges of a rapidly changing regulatory environment. It is easy to use, comprehensive (NO-NO<sub>2</sub>-SO<sub>2</sub>-CO-O<sub>2</sub>), and flexible.

Equally at home with a simple combustion test, or with the monitoring of more sophisticated emissions reduction systems, the ENERAC™ 400 EMS is designed to provide years of trouble-free service. It is flexible enough to be tailored to meet your specific monitoring needs, yet simple enough to be completely maintained in the field. Simple design, rugged construction and an impressive array of options are its hallmark. Designed as a field workhorse, the ENERAC™ 400 EMS can be enhanced at any time to meet your changing monitoring needs.

The ENERAC™ 400 EMS provides a comprehensive range of automatic emissions calculations (Grams/Break Horsepower Hour; Pounds/Million BTU), advanced ENERCOM™ Windows® software, two-way communications, and factory support. From low NO<sub>x</sub> burners to large rich-burn engines (5000 ppm NO<sub>x</sub>/20,000 ppm CO), the ENERAC™ 400 EMS is designed to help you meet your monitoring needs at an affordable price.



### MODEL 400 EMS SPECIFICATIONS

#### PHYSICAL:

1. CASE: 8.7"x 3.9"x 2.9"  
Aluminum case. Weight: 3 lbs.
2. PROBE: 9" L x 3/8" OD. Inconel stack probe. Probe housing connects to instrument via a 10 ft. viton hose and water trap with fiber filter. Max. continuous temperature: 2000°F.

#### ELECTRICAL POWER:

1. BATTERY: 6VDC. Interchangeable rechargeable NiCd or four disposable AA alkaline cells. Approx. 6 hours operating time.
2. AC: 120V, 60 Hz std. (220V 50 Hz optional), using battery charger (NiCd batteries only).

#### DISPLAY:

Four line by 16 character wide temperature range LCD with backlight illumination.

#### PRINTER:

External 2" thermal printer, 24 char. per line.

#### STORAGE:

1. INTERNAL: 100 individually selectable buffers hold one complete set of measurements each in non-volatile memory. Buffer contents can be sent to printer or RS-232 port. Data storage performed either on command or on a periodic basis.

#### COMMUNICATIONS:

1. RS-232 PORT: RS-232C port (DTE), 9600 Baud, half duplex, 1 start bit, 8 data bits, 1 stop bit, no parity.
2. SOFTWARE: Over 20 software commands for diagnosis and measurement. ENERCOM™ for Windows software available.

#### MISCELLANEOUS:

1. FUELS: 10 fuels, custom fuels available on request or by customer programming using ENERCOM software.
2. CALIBRATION: Optional Autozero. Automatic software span calibration CO, NO, NO<sub>2</sub> and SO<sub>2</sub>.

#### ENERAC 400 EMS

EES INC.

#2 Oil  
11/05/99 12:02:07

EFFICIENCY:

OXYGEN: 20.9%  
CARBON MONOXIDE: 0 PPM  
CARBON DIOXIDE: .0%

EXCESS Air OVER

STACK TEMPERATURE: 72 F  
NET STACK TEMP: 0 F  
AMBIENT TEMPERATURE: 72 F

NOX: 0 PPM  
NITRIC OXIDE: 0 PPM  
NITROGEN DIOXIDE: 0 PPM  
SULFUR DIOXIDE: 0 PPM

O2 ref = (5.0%)  
PPM readings are based on true O2 value  
By: \_\_\_\_\_

SHOWN 75% ACTUAL SIZE

MEASURED PARAMETERS	RANGE	RESOLUTION	ACCURACY
1. AMBIENT TEMPERATURE IC Sensor	0-150°F	1°F or C	3°F
2. STACK TEMPERATURE Type K Thermocouple	0-2000°F (1100°C)	1°F or C	5°F
3. OXYGEN (O <sub>2</sub> ) Electrochemical Cell, 2 Years	0-25%	0.1%	0.2%
4. NITRIC OXIDE (NO) Electrochemical Cell, 2 Years	0-2000 or 0-4000 PPM	1 PPM	4%
5. NITROGEN DIOXIDE (NO <sub>2</sub> ) Electrochemical Cell, 2 Years	0-1000 PPM	1 PPM	4%
6. CARBON MONOXIDE (CO) Electrochemical Cell, 2 Years	0-2000 or 0-20,000 PPM	1 PPM	4%
7. SULFUR DIOXIDE (SO <sub>2</sub> ) Electrochemical Cell, 2 Years	0-2000 PPM	1 PPM	4%

#### 8. TIME/DATE

Time in hours, minutes, seconds.  
Date in month, day, year format.

COMPUTED PARAMETERS	RANGE	RESOLUTION	ACCURACY
1. COMBUSTION EFFICIENCY Heat Loss Method	0-100%	0.1%	1%
2. CARBON DIOXIDE	0-40%	0.1%	5%
3. EXCESS AIR	0-1000%	1%	10%
4. OXIDES OF NITROGEN (NO <sub>x</sub> )	0-3000 PPM or 0-5000 PPM	1 PPM	4%
5. EMISSIONS 1	0-99.99 lbs/ MMBTU	0.01 lbs/ MMBTU	5%
6. EMISSIONS 2	0-99.99 grms/ Bk-hp-hr	0.01 grms/ Bk-hp-hr	5%

NOTE: Emissions readings in PPM can be adjusted to any oxygen reference. (Oxygen correction factor for emissions adjustable 0-20% in 1% steps plus TRUE.)

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