



# E8500

## Portable Industrial Flue Gas & Emissions Analyzer

Providing the latest in Combustion Gas & Emissions Analyzers for Boiler, Engine, Furnace, and other Combustion Applications

- Built-In Thermoelectric Chiller
- Automatic Condensate Drain Pump
- Wireless Remote Printer
- Draft & Differential Pressure Measurement
- 2 Channel Thermometer
- CO Dilution Auto-Range
- True NOx Measurements
- Up to 9 Total Gas Sensors
- NDIR Sensors
- Gas Velocity with Pitot Tube
- Rechargeable Battery
- Internal Memory
- PC Real-Time Software Package
- Bluetooth Module for PC



O<sub>2</sub>

CO<sub>2</sub>

CO

NO

NO<sub>2</sub>

NO<sub>x</sub>

SO<sub>2</sub>

H<sub>2</sub>S

C<sub>x</sub>H<sub>y</sub>

Flue Gas & Air Temp.

Draft & Diff. Pressure



**LOW NO<sub>x</sub> Sensors Available with 0.1 ppm Resolution**



**Wireless Communications with Computer & Remote Printer**



**Light Weight, Durable, and Easy to Transport Design**

**E Instruments International**

**www.E-Inst.com**

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## E8500 Features

### Thermoelectric Chiller

The internal thermoelectric chiller efficiently and quickly removes the water vapor from the flue gas sample to prevent combustion gases from bubbling from the gas phase into the condensate. The chiller is designed for superior sample conditioning and can handle flue gases up to 40% water content.



### Internal Data Memory

An extensive internal memory (up to 1000 tests) allows for data storage of all measured & calculated parameters. The memory can also be utilized for programmable longer term data storage.

### Auto Condensate Drain

The built-in condensate drain pump automatically pumps the accumulated water out through the bottom of the unit for greater convenience, especially when used in long term testing and monitoring.



### Real-Time Software

The standard "EGAS" software package includes the ability to save & graph data in real-time in the field with a laptop or in a laboratory with a PC. Communications between the E8500 and a computer is done via Bluetooth wireless communications. A Bluetooth module for a PC comes standard with each E8500 gas analyzer.. Data from the "EGAS" software can be exported to other spreadsheet programs for more user flexibility to create emissions reports.

### Wireless Remote Printer

The E8500 has an optional wireless remote thermal printer for convenient, simple, and easy use to print real-time in the field or at a later time for saved tests and data.

# E8500 Specifications

## Gas Sensors

The E8500 can have a maximum of nine total gas sensors, up to six electrochemical type sensors and up to three NDIR type sensors. The chart below details each sensor.

## Temperature Measurements

Temperature measurements for the flue gas and air as well as the differential temperature are standard features. The differential temperature is used as part of the efficiency calculation.

## Draft, Pressure, & Velocity

An internal pressure sensor allows the analyzer to measure pressure and stack draft. With two pressure inputs, a differential pressure can also be measured. Gas velocity can be measured using the differential pressure and an optional Pitot tube.



Parameter	Sensor	Range	Res.	Accuracy
O <sub>2</sub>	Electrochemical	0 - 25%	0.1%	±0.1% vol
CO	Electrochemical	0 - 8000 ppm	1 ppm	<300 ppm=±10 ppm up to 2000 ppm=±4% >2000 ppm=±10%
CO Auto Range	Electrochemical	0 - 20,000 ppm	1 ppm	±10% rdg.
CO	NDIR	0 - 15.00%	0.01%	±3% rdg.
NO	Electrochemical	0 - 4000 ppm	1 ppm	<125 ppm=±5 ppm up to 4000 ppm=±4%
NO <sub>2</sub>	Electrochemical	0 - 1000 ppm	1 ppm	<125 ppm=±5 ppm up to 1000 ppm=±4%
Low NO and/or Low NO <sub>2</sub>	Electrochemical	0 - 500 ppm	0.1 ppm	<50 ppm=±2 ppm up to 500 ppm=±4%
NO <sub>x</sub>	Calculated	0 - 5000 ppm	1 ppm	
SO <sub>2</sub>	Electrochemical	0 - 4000 ppm	1 ppm	<125 ppm=±5 ppm up to 4000 ppm=±4%
CO <sub>2</sub>	Calculated	0 - 99.9%	0.1%	
CO <sub>2</sub>	NDIR	0 - 20.0%	0.1%	±3% rdg.
C <sub>x</sub> H <sub>y</sub>	NDIR	0 - 3.00%	0.01%	±3% rdg. + 0.01%
H <sub>2</sub> S	Electrochemical	0 - 500 ppm	1 ppm	<125 ppm=±5 ppm up to 500 ppm=±4%
Tair	Pt100	-10 - 99.9°C 14.0 - 212.0°F	1°C 1°F	± 2°C ± 3°F
Tgas	Tc K	0 - 999.9°C 32.0 - 1830°F	1°C 1°F	± 3°C ± 5°F
ΔT	Calculated	0 - 999.9°C 32.0 - 1830°F	1°C 1°F	
Pressure/Draft	Bridge	±40.0 inH <sub>2</sub> O	0.1 inH <sub>2</sub> O	±1% rdg.
Excess Air	Calculated	1.00 - infinity	0.01	
Gas Velocity	Calculated	0 - 99.9 m/s 0 - 330 ft/s	0.1 m/s 0.1 ft/s	
Efficiency	Calculated	1 - 99.9%	0.1%	

## Rotating Display with Zoom

The LCD display screen has a back light and can be rotated for greater ease and convenience. The parameters displayed can be zoomed in to view from a distance or zoomed out for more parameters at once on the display screen.

## Calibration

The analyzer comes standard with a complete factory calibration. The analyzer can easily be recalibrated with span gas cylinders. Recalibration is recommended at least once each year to ensure analyzer accuracy.

## E8500 Ordering Code

### Part # 8500 - Table A - Table B- Table C

#### Table A - Electrochemical Sensors

- O** O<sub>2</sub> Sensor (0 - 25 %)
- C** CO Sensor (0 - 8000 ppm) with Dilution Auto-Range up to 20,000 ppm
- N** NO Sensor (0 - 4000 ppm)
- D** NO<sub>2</sub> Sensor (0 - 1000 ppm)
- S** SO<sub>2</sub> Sensor (0 - 4000 ppm)
- H** H<sub>2</sub>S Sensor (0 - 500 ppm)

#### Table B - NDIR (non-dispersive infrared) Sensors

- ABC** CO<sub>2</sub> Sensor (0 - 20 %), CxHy Sensor (0 - 3 %), and High CO Sensor (0 - 15 %)
- 0** No NDIR sensors

#### Table C - Sampling Probes and Hoses

- 12** 12" (300mm) Probe, 1470F (800C) max, with 10' (3m) Dual Hose
- 30** 30" (750mm) Probe, 1470F (800C) max, with 10' (3m) Dual Hose
- 40HT** 40" (1m) Probe, 2190F (1200C) max, with 10' (3m) Hose for High Temperature Combustion Applications
- 60HT** 60" (1.5m) Probe, 2190F (1200C) max, with 10' (3m) Hose for High Temperature Combustion Applications

#### Standard E8500 Configuration (E8500-OCN-0-12) Includes the following:

O<sub>2</sub>, CO, and NO gas sensors, thermoelectric chiller with automatic condensate drain pump, rechargeable battery pack, 110-240VAC/50-60Hz battery charger, 12"/300mm probe with 10'/3m dual hose, stack gas & air temperature measurements, draft & differential measurements, calculated values for efficiency, excess air, & CO<sub>2</sub>%, internal memory, real-time software package with Bluetooth module for PC, wireless communications, protective carrying case, calibration certificate, and operations manual.

Weight: 11 lbs. (5 kg)    Dimensions: 10x6x9.5" (26x15x24 cm)

