E INSTRUMENTS

Built With Quality In Mind

2015 Industrial Analyzers Product Catalog

E1500

Providing the Latest in Combustion Gas & Emissions Analyzers for Boiler, Engine, Furnace, and Other Combustion Applications

ε E INSTRUMENTS

Built with Quality in Mind

Industrial Combustion Gas Analyzer

Accurate

Reliable

Robust

Fast

CO_2

CO

O_2

NEW!

- Combustion Efficiency
- CO Sensor w/ NOx Filter
- Draft & Differential Pressure
- 2 Channel Thermometer
- Internal Memory (2000 Tests)
- Zoom Feature
- Pre-Calibrated, Field Replaceable Gas Sensors

Bluetooth

ε **PC Software with Automatic Data Saving**

ε **Full COLOR Graphic Display**

ε **BUILT-IN Printer**

Accuracy · Emissions · Indoor Air Quality · Efficiency

E Instruments International   **www.E-Inst.com**

E1500 Features

BUILT-IN Printer

Pre-Calibrated Field Replaceable Sensors

Full COLOR Graphic Display

NEW!

Simple Menu Interface

Magnetic Rubber Holster

Unbreakable Metal Connections

PC Software Package with Bluetooth & USB

Probes & Hoses

Standard: 12", 300mm Probe, 1470˚F/800˚C max with 10'/3m Dual Hose

Long: 30", 750mm Probe, 1470˚F/800˚C max with 10'/3m Dual Hose

Long & High Temp: 40", 1m Probe, 2190˚F/1200˚C max, with 10'/3m Dual Hose

Hose Extensions: 10'/3m Length Available

Parameter	Sensor	Range	Resolution	Accuracy
O_2	Electrochemical	0 - 25 %	0.1 %	±0.2 % vol
CO H_2 Compensated w/ Built-In NOx Filter	Electrochemical	0 - 8000 ppm	1 ppm	±10 ppm <400 ppm ±5 % rdg up to 2000 ppm ±10 % rdg for >2000 ppm
CO_2	Calculated	0 - 99.9%	0.1 %	
Tair	Pt100	-10 to 212 ˚F	0.1 ˚F	±1 ˚F
Tgas	Tc K	-10 to 1830 ˚F	0.1 ˚F	±2 ˚F
Differential Temp.	Calculated	-10 to 1830 ˚F	0.1 ˚F	
Pressure/Draft	Semiconductor	±0 - 80 inH₂O	0.001 in H_2O	±1 % (-4.014 - 0.806 inH₂O) ±0.008 (-0.802 - 0.802 inH₂O) ±1 % (0.806 - 0.292 inH₂O)
Excess Air	Calculated	0 - 850%	1 %	
Efficiency	Calculated	0 - 100%	0.1 %	

All E1500 Include:

- Built-In Printer
- Draft & Differential Pressure
- Temperature Measurements
- Calculation for CO_2, Efficiency & Excess Air
- Li-Ion Rechargeable Batteries & AC Charger
- Gas Sampling Probe & Hoses
- Water Trap with Filter Cartridge
- Magnetic Rubber Holster
- 2000 Test Internal Memory
- PC Software & USB Cable
- Bluetooth Module (Internal)
- Operating Manual
- Calibration Certificate
- Vinyl Carrying Case

Ordering Information

Model No.	Description
E1500-1	**E1500** Unit (O2 & CO Gas Sensors, CO2 Calculated, Efficiency, Excess Air, Draft, Pressure, Temperature, Rechargeable Battery & AC Plug, Gas Sample Probe with Hose, Vinyl Carrying Case, Calibration Certificate, Water Trap, 2000 Test Memory, Built-In Printer, & PC Software Package

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CE

E4500

Providing the Latest in Combustion Gas & Emissions Analyzers for Boiler, Engine, Furnace, and Other Combustion Applications

Industrial Combustion Gas & Emissions Analyzer

Accurate

Reliable

Robust

Fast

CO_2

CO

O_2

NEW!

- Up To **FOUR** Gas Sensors
- Combustion Efficiency
- Low NOx & Total NOx
- CO Sensor w/ NOx Filter
- Draft & Differential Pressure
- 2 Channel Thermometer
- Internal Memory (2000 Tests)
- Zoom Feature
- Pre-Calibrated, Field Replaceable Gas Sensors
- Dilution Pump For CO Auto-Range Measurements Up To 50,000 ppm

NO

NOx

NO_2

SO_2

$CxHy$ (HC)

Bluetooth®

PC Software with Automatic Data Saving

Full COLOR Graphic Display

BUILT-IN Printer

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E4500 Features

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Built with Quality in Mind

Pre-Calibrated Field Replaceable Sensors

BUILT-IN Printer

Full COLOR Graphic Display

Simple Menu Interface

Magnetic Rubber Holster

Unbreakable Metal Connections

PC Software Package with Bluetooth & USB

NEW!

Probes & Hoses

Standard: 12", 300mm Probe, 1470°F/800°C max with 10'/3m Dual Hose

Long: 30", 750mm Probe, 1470°F/800°C max with 10'/3m Dual Hose

Long & High Temp: 40", 1m Probe, 2190°F/1200°C max, with 10'/3m Dual Hose

Hose Extensions: 10'/3m Length Available

Parameter	Sensor	Range	Resolution	Accuracy
O_2	Electrochemical	0 - 25 %	0.1 %	±0.2 % vol
CO H$_2$ Compensated w/ Built-In NOx Filter	Electrochemical	0 - 8000 ppm	1 ppm	±10 ppm (0 - 200ppm) ±5 % rdg (201 - 2000ppm) ±10 % rdg (2001 - 8000ppm)
CO DILUTED	Electrochemical	0.8% - 5.00%	0.01%	±10% rdg
CO_2	Calculated	0 - 99.9%	0.1 %	
NO	Electrochemical	0 - 5000 ppm	1 ppm	±5 ppm (0 - 100 ppm) ±5% rdg (101 - 5000ppm)
NO_2	Electrochemical	0 - 1000 ppm	1 ppm	±5 ppm (0 - 100 ppm) ±5% rdg (101 - 1000ppm)
Low NO and/or Low NO_2	Electrochemical	0 - 500 ppm	0.1 ppm	±2 ppm (0.0 - 40.0ppm) ±5% rdg (40.1 - 500.0ppm)
NOx	Calculated	0 - 5000 ppm	1 ppm	
SO_2	Electrochemical	0 - 5000 ppm	1 ppm	±5 ppm (0 - 100ppm) ±5% rdg (101 - 5000ppm)
CxHy (HC)	Pellistor	0 - 5%	0.01%	±5% Full Scale
Tair	Pt100	-10 to 212 °F / -10 to 100 °C	0.1 °F / 0.1 °C	±1 °F / ±1 °C
Tgas	Tc K	-4 to 2280 °F / -20 to 1250 °C	0.1 °F / 0.1 °C	±0.5 °C (-20 to 100 °C) ±0.5% rdg (101 to 1250 °C)
Pressure/Draft	Semiconductor	±0 - 80 inH$_2$O	0.001 inH$_2$O	±1.0% rdg
Excess Air	Calculated	0 - 850%	1 %	
Efficiency	Calculated	0 - 100%	0.1 %	

All E4500 Kits Include:
- Built-In Printer
- Draft & Differential Pressure
- Temperature Measurements
- Calculation for CO$_2$, Efficiency & Excess Air
- Li-Ion Rechargeable Batteries & AC Charger
- Gas Sampling Probe & Hoses
- Water Trap with Filter Cartridge
- Magnetic Rubber Holster
- 2000 Test Internal Memory
- PC Software & USB Cable
- Bluetooth Module (Internal)
- Operating Manual
- Calibration Certificate
- ABS Hard Plastic Carrying Case

Ordering Information

Model No.	Description
E4500-3	E4500 with O$_2$, CO, NO/NOx Gas Sensors Installed, **Upgradeable** to 4th Gas Sensor
E4500-N	E4500 with O$_2$, CO, NO/NOx, **NO$_2$** Gas Sensors & CO Dilution Auto-Range to 50,000 ppm
E4500-S	E4500 with O$_2$, CO, NO/NOx, **SO$_2$** Gas Sensors & CO Dilution Auto-Range to 50,000 ppm
E4500-C	E4500 with O$_2$, CO, NO/NOx, **CxHy (HC)** Gas Sensors & CO Dilution Auto-Range to 50,000 ppm

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CE

E5500

E INSTRUMENTS

Portable Industrial Flue Gas & Emissions Analyzer

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

- CO Dilution Auto-Range
- Total NOx Measurements
- Up to 5 Total Gas Sensors
- Wireless Remote Printer
- External Water Trap with Filter
- Gas Velocity with Pitot Tube
- Rechargeable Battery
- Internal Memory (1000 Tests)
- Wireless Communications with Computer & Remote Printer
- BlueTooth Module for PC

Bluetooth®

Sensors
O_2
CO_2
CO
NO
NO_2
NO_x
SO_2
Flue Gas & Air Temp.
Draft & Diff. Pressure
Stack Gas Velocity

NEW REAL-TIME Software Package with BlueTooth Wireless & USB

NEW Up to Five Gas Sensors Including Both NO + NO2 for Total NOx

NEW LOW NOx Sensors Available with 0.1 ppm Resolution

Emissions • Indoor Air Quality • Efficiency • Accuracy

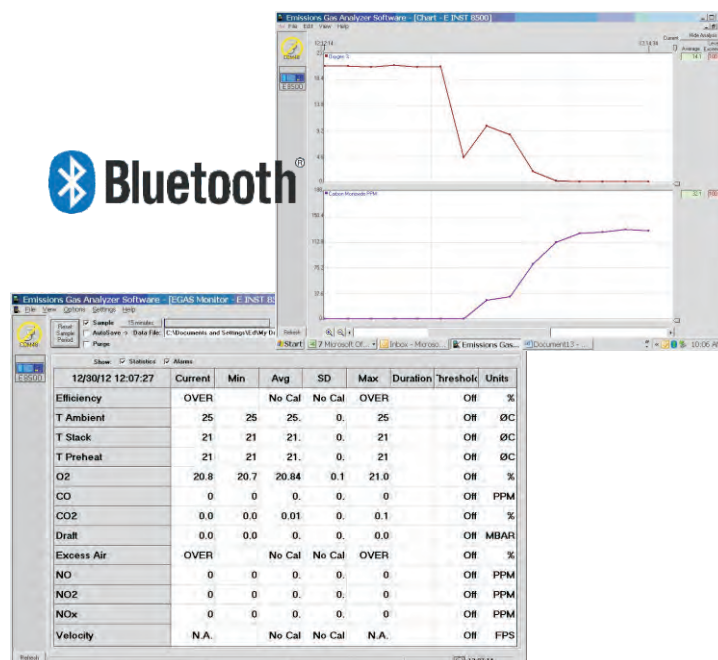**"Built with Quality in Mind"**

E5500

Low NOx and Total NOx

The E5500 can be configured with low range NOx gas sensors with 0.1 ppm resolution and greater accuracy for low NOx concentration measurements. Total NOx, with direct actual measurements of both NO and NO_2, is available with the E5500.

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 E5500 and a computer are done via wireless Bluetooth communications or USB cable. A Bluetooth module for a computer comes standard with each E5500 gas analyzer. Data from the "EGAS" software can be exported to other spreadsheet programs for more user flexibility to create detailed emissions reports.

E5500 Specifications

Gas Sensors

The E5500 can have a maximum of five total gas sensors, that are electrochemical type gas 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.

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.

Parameter	Sensor	Range	Res.	Accuracy
O_2	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.
NO	Electrochemical	0 - 4000 ppm	1 ppm	<125 ppm=±5 ppm up to 4000 ppm=±4%
NO_2	Electrochemical	0 - 1000 ppm	1 ppm	<125 ppm=±5 ppm up to 1000 ppm=±4%
Low NO and/or Low NO_2	Electrochemical	0 - 500 ppm	0.1 ppm	<50 ppm=±2 ppm up to 500 ppm=±4%
NO_x	Calculated	0 - 5000 ppm	1 ppm	
SO_2	Electrochemical	0 - 4000 ppm	1 ppm	<125 ppm=±5 ppm up to 4000 ppm=±4%
CO_2	Calculated	0 - 99.9%	0.1%	
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 inH2O	0.1 inH2O	±1% rdg.
Excess Air	Calculated	1.00 - infinity	0.01	
Gas Velocity	Calculated	3 - 99.9 m/s 10 - 330 ft/s	0.1 m/s 0.1 ft/s	
Efficiency	Calculated	1 - 99.9%	0.1%	

E5500

E5500 Ordering Code

Part # E5500 - Table A - Table B

Table A - Electrochemical Gas Sensors

N O_2, CO, NO, & NO_2 Sensors (with CO Dilution Auto-Range up to 20,000 ppm)
S O_2, CO, NO, & SO_2 Sensors (with CO Dilution Auto-Range up to 20,000 ppm)
5 O_2, CO, NO, NO_2, & SO_2 Sensors (with CO Dilution Auto-Range up to 20,000 ppm)

Table B - 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 E5500 Configuration Includes the following:

-External water trap assembly with mounting piece
-Rechargeable battery pack
-110-240VAC/50-60Hz battery charger
-Stack gas & air temperature measurements
-Draft & differential measurements
-Calculated values for efficiency, excess air, & CO2%
-Internal memory (1000 Tests)
-Real-Time software package with Bluetooth module for PC
-USB communications cable
-Bluetooth Wireless communications
-Protective carrying case
-Calibration certificate
-Operations manual

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

E8500

E INSTRUMENTS

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
- CO Dilution Auto-Range
- True NOx Measurements
- Up to 9 Total Gas Sensors
- NDIR Sensors
- Gas Velocity with Pitot Tube
- Rechargeable Battery
- Internal Memory
- Wireless Communications with Computer & Remote Printer
- BlueTooth Module for PC

Bluetooth®

O_2

CO_2

CO

NO

NO_2

NOx

SO_2

H_2S

CxHy

Flue Gas & Air Temp.

Draft & Diff. Pressure

Stack Gas Velocity

NEW Up to Nine Gas Sensors Including NDIR Bench for CO_2, CxHy, High CO

NEW REAL-TIME Software Package with BlueTooth Wireless & USB

NEW LOW NOx Sensors Available with 0.1 ppm Resolution

Emissions • Indoor Air Quality • Efficiency • Accuracy

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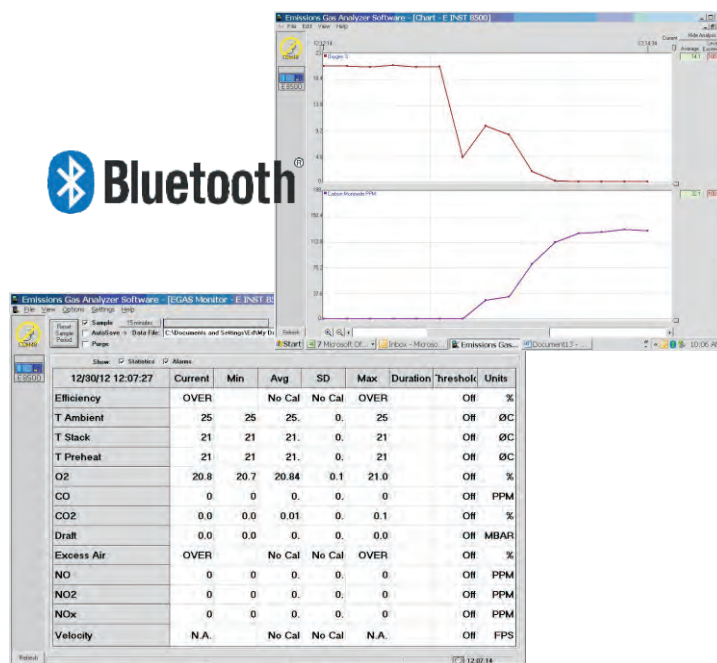
E8500

Thermoelectric Chiller with Auto Condensate Drain

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 built-in condensate drain pump automatically pumps the accumulated water out through the bottom of the unit for greater convenience.

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 are done via wireless Bluetooth communications or USB cable. A Bluetooth module for a computer 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 detailed emissions reports.

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, 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_2	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_2	Electrochemical	0 - 1000 ppm	1 ppm	<125 ppm=±5 ppm up to 1000 ppm=±4%
Low NO and/or Low NO_2	Electrochemical	0 - 500 ppm	0.1 ppm	<50 ppm=±2 ppm up to 500 ppm=±4%
NO_x	Calculated	0 - 5000 ppm	1 ppm	
SO_2	Electrochemical	0 - 4000 ppm	1 ppm	<125 ppm=±5 ppm up to 4000 ppm=±4%
CO_2	Calculated	0 - 99.9%	0.1%	
CO_2	NDIR	0 - 20.0%	0.1%	±3% rdg.
C_xH_y	NDIR	0 - 3.00%	0.01%	±3% rdg. + 0.01%
H_2S	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 inH2O	0.1 inH2O	±1% rdg.
Excess Air	Calculated	1.00 - infinity	0.01	
Gas Velocity	Calculated	3 - 99.9 m/s 10 - 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 continuous back light and is automatically rotated. 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

E8500 Ordering Code

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

Table A - Electrochemical Sensors

O O_2 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_2 Sensor (0 - 1000 ppm)
S SO_2 Sensor (0 - 4000 ppm)
H H_2S Sensor (0 - 500 ppm)

Table B - NDIR (non-dispersive infrared) Sensors

ABC CO_2 Sensor (0 - 20 %), CxHy Sensor (0 - 3 %), <u>and</u> 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:

- O2, 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 pressure measurements
- Calculated values for efficiency, excess air, & CO2%
- Internal memory (1000 tests)
- Real-time software package with Bluetooth module
- Wireless Bluetooth communications
- Protective carrying case
- Calibration certificate
- Operations manual

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

Built With Quality In Mind

E Instruments International manufactures a complete range
of innovative instrumentation solutions including
Portable Industrial Emissions Analyzers, which
we export to over 50 countries worldwide.

For more information about our products please contact us
at 215-750-1212 or visit our website at
www.E-Inst.com

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