



E Instruments International 2013 Industrial Analyzers Catalog



www.E-Inst.com

P: 215-750-1212 F: 215-750-1399

A: 402 Middletown Blvd, Ste 216 Langhorne, PA 19047

E1100



Industrial Combustion Analyzer

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

- CO Sensor w/ NOx Filter
- Built-In NON-THERMAL Printer
- Draft & Differential Pressure Meter
- 2 Channel Thermometer
- Ambient CO Monitor
- ONE Button Operation
- CO with 1 ppm Resolution
- Rechargeable Li Ion Battery
- ZOOM Function
- Immediate Response Time
- External Condensation Trap
- 900 Test Internal Memory
- PC Software with USB Cable & BlueTooth Communications



O₂

CO₂

CO

Efficiency

Excess Air

Tair Tgas

DRAFT

Diff. Press

Ambient
CO



**Unbreakable Metal
Probe Connections**



**Field Replaceable
Pre-Calibrated Sensors**

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E1100 Features



Internal Impact Printer

A **Built-In** impact printer uses **NON-THERMAL** paper rolls for easy printing of data without extra parts or communications needed.

BIG Bright **BLUE** Backlight w/ ZOOM Feature

Unbreakable **Metal** Connections

10' Dual Hose, 12" Probe
Gas, Draft, Temp = All-at-once



Pre-Calibrated Gas Sensors

The field-replaceable, pre-calibrated gas sensors can easily be replaced in the field to provide a convenient way to minimize costly downtime!

Magnetic Rubber Boot
"Hands-Free"

Durable "**Boiler Room**" Design

10 Fuel / Oil Types
Including **Bio-Heat 5%**



Parameter	Sensor	Range	Resolution	Accuracy
O ₂	Electrochemical	0 - 25%	0.1%	±0.2% vol
CO H ₂ Compensated w/ Built-in NO _x Filter	Electrochemical	0 - 8000 ppm	1 ppm	±20 ppm <400ppm ±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 2280°F	0.1°F	
Pressure/Draft	Semiconductor	± 0 - 80 inH ₂ O	0.001 inH ₂ O	±0.008 inH ₂ O for ±0.16 inH ₂ O ± 5% meas. val. elsewhere
Excess Air	Calculated	0 - 850%	1 %	
Efficiency	Calculated	0 - 100%	0.1% (also for condensing boilers with automatic detection)	

Ordering Information

Model No.	Description
E1100-1	E1100 Unit (O ₂ , CO, CO ₂ , Efficiency, Excess Air, Draft, Pressure, Temp, Rechargeable Battery & AC Plug, Dual Hose, Probe, ABS Carrying Case, Calibration Certificate, Operating Manual, Water Trap, Paper Roll, 900 Test Memory, Built-In Printer , & Software Package)



Pre-Calibrated Gas Sensors



Unbreakable Metal Connections



E1100-1

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E4400



Industrial Combustion Gas & Emissions Analyzer

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

- Up To FOUR Gas Sensors
- LOW NOx and TOTAL NOx Capable
- CO Sensor w/ NOx Filter
- Built-In NON-THERMAL Printer
- Draft & Differential Pressure Meter
- 2 Channel Thermometer
- CO with 1 ppm Resolution
- Rechargeable Lithium Ion Battery
- ZOOM Function
- Immediate Response Time
- External Condensation Trap
- 900 Test Internal Memory
- PC Software with BlueTooth & USB Communications
- Unbreakable Metal Probe & Hose Connections



O₂

CO₂

CO

NO

NO₂

NO_x

SO₂

CxHy

Efficiency & Excess Air

Tair Tgas

Draft & Pressure



LOW NOx Sensors Available



Dilution Pump For CO Auto-Range Measurements Up To 50,000 ppm



Field Replaceable Pre-Calibrated Sensors

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E4400 Features



Internal Impact Printer

A built-in impact printer uses **NON-THERMAL** paper rolls for easy printing of data without extra parts or communications needed.

PC Software Package For Unlimited Data Storage



Pre-Calibrated Gas Sensors

The field-replaceable, pre-calibrated gas sensors can easily be replaced in the field to provide a convenient way to minimize costly downtime!

Magnetic Support For "Hands-Free" Operations

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 Hose

Hose Extensions: 10'/3m Lengths



Unbreakable Metal Connections



Parameter	Sensor	Range	Resolution	Accuracy
O ₂	Electrochemical	0 - 25%	0.1%	±0.2% vol
CO	Electrochemical	0 - 8000 ppm	1 ppm	±10 ppm (0-200ppm) ±5% rdg (201-2000ppm) ±10% rdg (2001-8000ppm)
H ₂ Compensated w/ Built-in NO _x Filter				
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 (0-100ppm) ±5% rdg (101-5000ppm)
NO ₂	Electrochemical	0 - 1000 ppm	1 ppm	±5 ppm (0-100ppm) ±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)
NO _x	Calculated	0 - 5000 ppm	1 ppm	
SO ₂	Electrochemical	0 - 5000 ppm	1 ppm	±5 ppm (0-100ppm) ±5% rdg (101-5000ppm)
CxHy	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%	

Ordering Information

Model No.	Description
E4400-3D	E4400 with O ₂ , CO, NO/NO _x gas sensors and CO Dilution Auto-Range to 50,000 ppm
E4400-N	E4400 with O ₂ , CO, NO/NO _x , NO ₂ gas sensors and CO Dilution Auto-Range to 50,000 ppm
E4400-S	E4400 with O ₂ , CO, NO/NO _x , SO ₂ gas sensors and CO Dilution Auto-Range to 50,000 ppm
E4400-C	E4400 with O ₂ , CO, NO/NO _x , CxHy gas sensors and CO Dilution Auto-Range to 50,000 ppm

All E4400 Include: built-in impact printer, draft/pressure & temperature measurements, calculations for CO₂, efficiency & excess air, rechargeable batteries & AC charger, gas sampling probe & hoses, water trap with filter cartridge, protective rubber holster with magnetic supports, internal memory, PC software package with USB cable, operating manual, calibration certificate, & ABS hard plastic carrying case

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E5500



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



O₂

CO₂

CO

NO

NO₂

NO_x

SO₂

Flue Gas &
Air Temp.

Draft & Diff.
Pressure

Stack Gas
Velocity



**REAL-TIME Software Package
with BlueTooth Wireless & USB**



**Up to Five Gas Sensors Including
Both NO + NO₂ for Total NO_x**



**LOW NO_x Sensors Available
with 0.1 ppm Resolution**

“Built with Quality in Mind”

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E5500

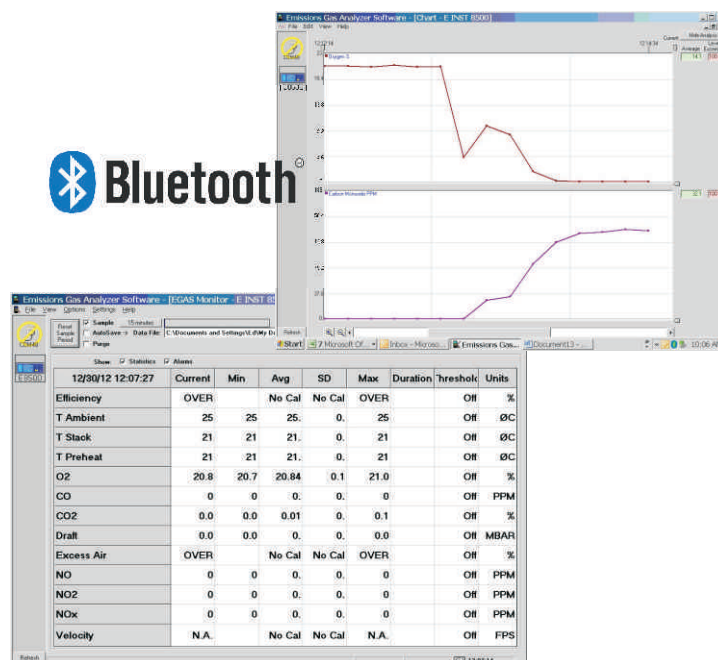


Low NOx and Total NOx

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 NO₂, 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.



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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 inH ₂ O	0.1 inH ₂ 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%	

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



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



O₂

CO₂

CO

NO

NO₂

NO_x

SO₂

H₂S

C_xH_y

Flue Gas &
Air Temp.

Draft & Diff.
Pressure

Stack Gas
Velocity



**Up to Nine Gas Sensors Including
NDIR Bench for CO₂, C_xH_y, High CO**



**REAL-TIME Software Package
with BlueTooth Wireless & USB**



**LOW NO_x Sensors Available
with 0.1 ppm Resolution**

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E8500

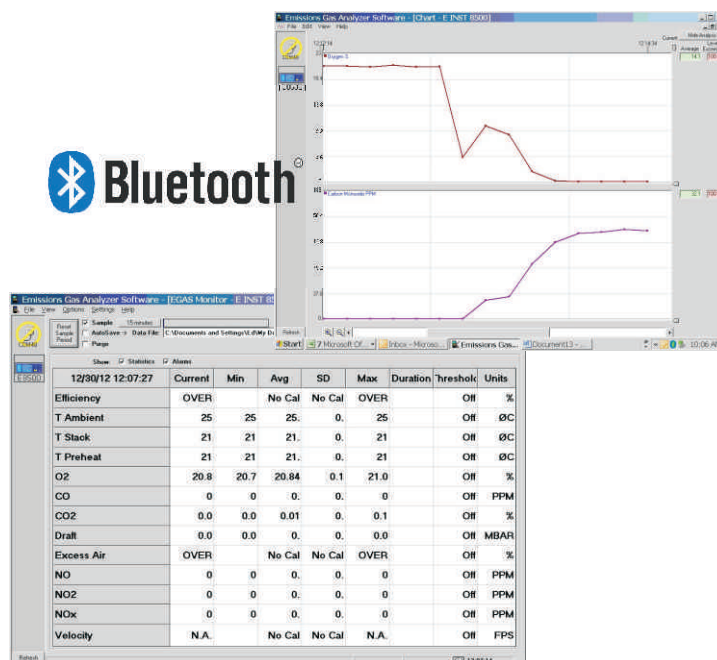


Thermoelectric Chiller with Auto Condensate Drain

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.



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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.



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.

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 _x H _y	NDIR	0 - 3.00%	0.01%	±3% rdg. + 0.01%
H ₂ 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 ₂ O	0.1 inH ₂ 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%	

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 ₂ S 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)



E Instruments International is a manufacturer & provider of 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