



ECOM J2KN - Combustion Analyzer with wireless remote control, Low NOx capability and Boiler Test System software!

ECOM America, a global leader in portable emission analyzers is proud to offer the boiler industry an opportunity to separate and highlight your service capability above any other in the markets you serve. Designed to empower its operator with remote, wireless control, the J2KN is ideally suited for combustion & emission monitoring on large industrial systems where control panel access is away from the flue test port. In addition, the Boiler Test System (BTS) is a powerful and unique tool that provides concise data collection and professional reporting capability, plus a Cost Savings Calculator, showing future savings to the customer, based on the service engineer's work.

J2KN – An Incredible Analyzer

- Measures O₂, CO, NO, NO₂, plus Gas & Ambient Temperature measurement, stack Pressure & Draft, and performs calculations of CO₂, Efficiency, and Excess Air.
- Low NO_x Version has a range of 0–350 ppm with 0.1 ppm resolution for NO and NO₂.
- Standard features: high flow pump, flow meter, integral impact printer
- EPA compliant thermoelectric gas cooler with automatic condensate drain
- Handheld wireless remote LCD – allows full operation of analyzer.

BTS – An Incredible Software Program

- A professional sales tool for the boiler service engineer.
- Includes a convenient database of clients, locations and equipment to enhance the efficiency and profitability of the service engineer.
- PC-based BTS is radio-linked to the J2KN
- Provides an automated monthly monitoring report
- Includes a Cost Savings Calculator that allows the service engineer to quickly and easily demonstrate how equipment repairs or upgrades can result in thousands of dollars in annual fuel savings for the client.

ECOM J2KN

Portable Emission Analyzer



- Measures O₂, CO, NO_x, “Low NO_x”, SO₂, & Combustibles
- CO₂, Efficiency & Excess Air Calculations
- Stack Temperature and Draft Measurement
- Wireless remote control with backlit LCD display
- On - board impact printer
- Thermoelectric Gas cooler & automatic moisture drain
- In-line flowmeter with 3.5+ lpm pump
- Automatic purge / Sensor overrange protection
- Advanced DAS 2.0 software compatible plus wireless data transmission to your PC

The ECOM J2KN with wireless remote control is a portable emission analyzer offering world-class performance in a rugged, user-friendly package.

The J2KN's handheld remote allows complete wireless operation of the analyzer, a large LCD showing all values at a glance, zoom display capability, and plug-in memory up to 128 MB. The remote display feature makes the J2KN an ideal emission analyzer where combustion controls are located away from the flue test port on large combustion systems.

The J2KN can be fitted with sensors to measure O₂, CO, NO, NO₂, SO₂, and Combustibles, along with gas and ambient temperatures, stack draft & pressure, plus calculations of CO₂, efficiency, dew point and excess air. A special Low NO_x version of the J2KN is designed for single digit NO_x measurements with resolution to 0.1 PPM!

Standard ECOM features include high flow pump with flowmeter, integral impact printer, thermoelectric gas cooler with automatic condensate drain, on board data storage, and proven CO overrange protection. Sensor life generally averages 2-3 years due to proprietary design of sensor manifold and gas delivery system. Along with superior performance features, the J2KN also offers wireless transmission of real time data via remote receiver connected to your laptop PC using ECOM's Advanced DAS program. Complete emission reports are transmitted and stored to your laptop while on-site.

MEASUREMENT (KEY)	RANGE	ACCURACY	RESOLUTION	SENSOR LIFE	SENSOR TYPE
Oxygen (O)	0-21 % vol.	± 2% Measured	0.1 % vol.		Electrochemical
Carbon Monoxide (C)	0-4,000 ppm	± 2% Measured	1 ppm		Electrochemical
Carbon Monoxide (V)	0-40,000 ppm	± 2% Measured	1 ppm		Electrochemical
Nitric Oxide (N)	0-4,000 ppm	± 2% Measured	1 ppm		Electrochemical
Nitric Oxide (.N)	0-400 ppm	± 2% Measured	0.1 ppm		Electrochemical
Nitrogen Dioxide (X)	0-500 ppm	± 2% Measured	1 ppm		Electrochemical
Nitrogen Dioxide (.X)	0-50 ppm	± 2% Measured	0.1 ppm		Electrochemical
Sulfur Dioxide (S)	0-5,000 ppm	± 2% Measured	1 ppm		Electrochemical
Combustibles (H)	0-6.00 % vol.	± 2% Measured	0.01% vol		Pellister
Gas Temperature	32-1800 F	± 2% Measured	1 deg F		NiCrNi
Ambient Temperature	0-250 F	± 2% Measured	1 deg F		Semi-conductor
Draft / Pressure	± 40" H ₂ O	± 2% Measured	0.1% H ₂ O		DMS
O ₂ Correction	0-20% Oxygen				
Smoke Scale	0-9				
Carbon Dioxide CO ₂	0-CO ₂ max of fuel	Calculated			
Efficiency	0-99.9%	Calculated			
Excess Air (Lambda)	1-infinity	Calculated			

*ACCURACY: When calibrated prior to use per ECOM America, Ltd. specifications.

Physical

Instrument: 16" x 10" x 12" Aluminum Carry Case
Probe: 13" Length x 3/8" OD Inconel w/ Pistol Grip Handle*
Sample Line: 15' high-temp flex hose w/thermocouple wire*
Weight: 28 lbs.

Electrical

AC: 110/220V 50/60Hz (User selectable)
Batteries: 6-8 hour battery life, 12V lead-acid
Pump: Flow rate of 3.5+ lpm
Display: Backlit, adjustable contrast & zoom, displays all parameters simultaneously.

Operating Temperature

Core temperature of the instrument is monitored continuously. Internal Temperature Compensation software assures accurate sensor response over the range of 20°F to 104°F.

*Optional probe & sample line lengths are available.

Customer Service / Technical Support

ECOM America Ltd. has built an outstanding reputation in the industries we serve by providing a high quality product and responsive technical support to our customers. We maintain a large inventory of analyzers and parts to assure fast delivery of new items and quick turnaround on service. Always Expect Responsive Customer Support & Service from ECOM!

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Order Information

ECOM J2KN

J2KN is available with 2-5 sensors.
 Common configurations include:

2-3 Gas	4 Gas	5 Gas
OC	OCNX	OCVNX
OCN	OC.N.X	OCV.N.X
		OC.N.XH
		OC.N.XS
		OCNXS
		OCNXH

Consumables:

Water Trap / Particulate Filters, NO_x / SO₂ Filter Media, Printer Paper / Printer Ribbon

Parts & Accessories:

Transport / Shipping Cases, Refillable Calibration Gas Bottles, Data Acquisition Software



EQUIPMENT TEST REPORT

BOILER COMBUSTION MONITORING

		CO Permit Level: 50				NOx Permit Level: 9			
CAM POS. FIRING RATE	% O2	CO (3% O2)	NO (3% O2)	NO2 (3% O2)	NOx (3% O2)	Stack Temp	Gas Train	Steam Press	Efficiency
1	7.9%	185ppm	36.5ppm	2.3ppm	38.8ppm	73F	433	57	90.1%
2									
3	7.9%	185ppm	36.5ppm	2.3ppm	38.8ppm	73F	445	33	90.1%
4									
5	7.9%	185ppm	36.4ppm	2.3ppm	38.7ppm	73F	455	34	90.1%
6									
7	7.9%	185ppm	36.4ppm	2.3ppm	38.7ppm	73F	662	22	90.1%
8									
9	7.9%	185ppm	36.4ppm	2.3ppm	38.7ppm	73F	557	44	90.1%
10									
11	7.9%	185ppm	36.4ppm	2.4ppm	38.8ppm	73F	700	55	90.1%
12									

BOILER SYSTEM	Visual Inspection	FLAME SIGNAL			
		BLOWER MOTOR VAC	L1: 200	L2: 200	L3: 211
BOILER SAFETIES	GOOD	BLOWER MOTOR AMP	L1: 49	L2: 50	L3: 50
BOILER HOT SPOTS	GOOD	BLOWER MOTOR HP	25		
FEEDWATER VALVES	GOOD	BLOWER MOTOR FLA	22		
WATERSIDE GASKETS	NEEDS REPAIR	BLOWER MOTOR SF	400		
SIGHT GLASSES	GOOD	ALL LINKAGE AND SET SCREWS CHECKED			
REFRACTORY	GOOD	AIR: OK	GAS: OK	FGR: OK	
STEAM PIPE INSULATION	GOOD	HOT WATER SUPPLY (F)	200		
DA INSULATION	NEEDS REPAIR	HOT WATER RETURN (F)	210		

FEED WATER SYSTEM				LAST FIVE (5) BMS ALARMS	
PUMP DISCHARGE PRESSURE	79			1) LOW WATER	
PUMP VAC	L1: 220	L2: 220	L3: 219	2) LOW FLAME	
PUMP AMP	L1: 48	L2: 52	L3: 50	3) HIGH GAS PRESSURE	
DA PRESSURE	211			4) FUEL VALVE MALFUNCTION	
DA TEMP	88			5) NO COFFEE	

CUSTOMER: ECOM		JOB NO.: 07-14277		DATE: 11/19/07	
EQUIPMENT: CB		BURNER: CB			
MODEL: 200-600		MODEL: FIREBALL			
SERIAL NUMBER: 67812	BOILER NUMBER: 200-600		SERIAL NO.: 777-908		
ANALYZER NO.: 1289		LAST CALIBRATION DATE: 10/13/07		O2 CORRECTION: 3% O2	
<p>NOTES: THIS IS A DEMO REPORT TO SHOW THE TYPE OF INFORMATION GATHERED BY ECOM BTS. THIS REPORT CAN BE CUSTOMIZED TO INCLUDE YOUR COMPANY LOGO. WE ALSO HAVE A SECTION THAT WILL DEMONSTRATE SAVINGS TO THE CUSTOMER BY THE ADJUSTMENTS AND SERVICES YOUR COMPANY CAN OFFER. CONTACT ECOM AT 877.326.0411 FOR DETAILS.</p>					

SERVICE ENGINEER: Drew Wilson	PRINT CUSTOMER SIGNATURE:	CUSTOMER AUTHORIZED SIGNATURE:
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PROJECT DETAILS		Enter the Details	
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Customer:-	ABC Manufacturing	Boiler Output rating:-	100 Boiler HP
Service Engineer:-	Tom the Technician	Average Firing Rate:-	61 % Max 100
Job Number	07-122	Fuel Fired:-	Gas/Oil/HFO
Job Address	Bada Bing Street	Annual Hours Run	8760 Max 8760
Site Contact:-		Fuel Cost:-	0.65 \$ Per Therm
Site Telephone:-		Current Boiler Efficiency	80 %
Site Fax:-		Projected Boiler Efficiency	83 %

BOILER EFFICIENCY CALCULATIONS

Boiler #1		Boiler #2	
Boiler Average Output	800 HP	Boiler Average Output	61 HP
Average BTU Output:-	26,816,000 BTU/Hr	Average BTU Output:-	2,044,720 BTU/Hr
Current Boiler Efficiency:-	81.23 %	Projected Boiler Efficiency:-	83.00 %
Average BTU Input:-	33,012,434 BTU/Hr	Average BTU Input:-	2,463,518 BTU/Hr
Annual Hours Run:-	5000 Hours	Annual Hours Run:-	8760 Hours
Fuel Cost:-	\$1.00 \$ Per Therm	Fuel Cost:-	\$0.65 \$ Per Therm
Annual Fuel Cost:-	1,650,621.69 \$US	Annual Fuel Cost:-	140,272.72 \$US
Projected Boiler US\$ Savings:-		1,510,348.97	

COMBUSTION EFFICIENCY CALCULATIONS

COMBUSTION IMPROVEMENTS AND ENERGY SAVINGS CALCULATIONS - PROJECTED

Part	0.5	%	8,253.11	US\$
Part	0.5	%	8,253.11	US\$
Part	1.0	%	16,506.22	US\$
Part	0.0	%	0.00	US\$
Part	0.0	%	0.00	US\$
Estimated % Savings	2.0	%	Projected Savings	\$ 33,012.43