



BACHARACH'S NEW STANDARD IN COMBUSTION & EMISSIONS ANALYSIS

PCA[®] 2

Affordable, State of the Art Combustion Analyzer



Smart Sensors

- Field replaceable
- Pre calibrated
- Easy access
- Quick and accurate response

Measures 4 Gases Simultaneously

- **Standard** - O₂, CO-H₂
- **Optional** - CO (High), NO, NO₂, & SO₂

Automatic CO Overrange Protection

Versatile Power Management

- Disposable batteries
- Rechargeable batteries
- Optional universal power supply

Graphic Display

- 160 x 160 graphic liquid crystal display
- Easy to read
- Backlit
- Zoom

PCA[®] 2

The PCA[®] 2 is a commercial grade, handheld combustion and emissions analyzer for on demand or semi-continuous sampling of light industrial, institutional, commercial and residential furnaces, boilers and appliances. The PCA[®] 2 is the perfect tool for service technicians and boiler contractors who need to ensure safe operating conditions, determine combustion efficiency or perform emissions testing in combustion applications.

The PCA[®] 2 directly measures and displays flue gas Oxygen (O₂), Carbon Monoxide (CO), Stack Temperature, Draft, Differential Pressure, Combustion Air Temperature and optionally measures and displays Nitric Oxide (NO), Nitrogen Dioxide (NO₂) and Sulfur Dioxide (SO₂). Simultaneously, the PCA[®] 2 calculates and displays Combustion Efficiency (EFF), Excess Air (EA), Carbon Dioxide (CO₂), NOx and Oxygen reference values. The PCA[®] 2 performs combustion calculations for ten fuels including, Natural Gas, Oil #2, Oil #4, Oil #6, Propane, Coal, Wood, Kerosene, Bagasse and Digester Gas. The large backlit graphic display shows eight different measurements and calculated values simultaneously, and also has zoom capabilities.

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SPECIFICATIONS

Measurement Ranges	Primary/Ambient Air Temperature Stack Temperature Oxygen Carbon Monoxide (H ₂ comp) Carbon Monoxide, high range Nitric Oxide Nitrogen Dioxide Sulfur Dioxide Pressure/Draft	-4° to 999° F -4° to 2192° F 0 to 20.9% 0 to 4,000 ppm 4,001 to 20,000 ppm 0 to 3,000 ppm 0 to 500 ppm 0 to 5,000 ppm -72 to +72 inw/c
Calculated Ranges	Combustion Efficiency Excess Air Carbon Dioxide (dry basis) NO _x (NO _x = NO + NO ₂) NO _x referenced to % O ₂ CO referenced to % O ₂ NO referenced to % O ₂ NO ₂ referenced to % O ₂ SO ₂ referenced to % O ₂	0.1 to 100% 1.0 to 250% 0 to fuel dependent maximum 0 to 3,500 ppm 0 to 9,999 ppm 0 to 9,999 ppm 0 to 9,999 ppm 0 to 9,999 ppm 0 to 9,999 ppm
Accuracy	Oxygen Stack or Flue Gas Temperature Primary-air/Ambient Temperature Pressure/Draft CO NO NO ₂ * SO ₂ *	± 0.3% O ₂ (on flue gas) ± 4°F between 32 and 255°F (± 2°C between 0 and 124°C) ± 6°F between 257 and 480°F (± 3°C between 125 and 249° C) ± 8°F between 482 and 752°F (± 4°C between 250 and 400°C) ± 2°F between 32 and 212°F (± 1°C between 0 and 100°C) ± 2% of reading or ± .02 inw/c whichever is greater between 0 and ± 10 inw/c ± 3% of reading between ± 10 and ± 72 inw/c ± 5% of reading or ± 10 ppm whichever is greater between 0-2000 ppm CO; ± 10% of reading between 2001 to 20,000 ppm CO ± 5% of reading or ± 5 ppm whichever is greater between 0-2000 ppm NO ± 5% of reading or ± 5 ppm whichever is greater between 0-500 ppm NO ₂ ± 5% of reading or ± 10 ppm whichever is greater between 0-2000 ppm SO ₂
Memory	500 complete combustion test records	
Logged Memory	500 complete logged combustion test records	
Selectable Fuels	Natural Gas, Oil #2, Oil #4, Oil #6, Propane, Coal, Wood, Kerosene, Bagasse and Digester Gas	
Size	9"H x 3"W x 2.5"D (22.9 cm x 7.6 cm x 6.3 cm)	
Weight	1.4 lbs (0.6 kg)	
Power Source	Four disposable AA alkaline batteries or NiMH rechargeable batteries providing 10 hours of continuous operation. Optional AC Power Adapter	
Display	160 x 160 (2.5 in x 2.5 in.) Graphic Liquid Crystal Display	
Warm Up Time	60 second total warm up time (Sensors are checked and autozeroed during warm up)	

PCA® 2 REPLACEMENT PARTS

24-0788	Replacement O ₂ sensor
24-0789	Replacement CO sensor
24-0881	Replacement NO sensor
24-0997	Replacement CO (high range)
24-0998	Replacement SO ₂ sensor
24-1027	Replacement NO ₂ sensor
24-1395	Smart sensor, CO
24-1397	Smart sensor, CO (high range)
24-1398	Smart sensor, SO ₂
24-1399	Smart sensor, NO ₂
24-1401	Smart sensor, NO
204-0020	Battery, NO bias battery
24-7059	Calibration kit (less calibration gas)
24-1400	IrDA Printer with disposable batteries
24-1310	Printer paper, 5 rolls
06-8733	Printer paper, 1 roll
24-3004	Probe assembly
19-3265	Replacement water trap assembly
07-1644	Replacement filter element (pkg of 3)
24-8414	Replacement thermocouple, 12 inch
19-3037	Probe stop
24-1124	Extended hose assembly, 20 ft.
104-1797	Thermocouple, 10 ft. (combustion air temp.)
104-1798	Thermocouple, 1 in. (ambient air temp.)
24-1409	Protective rubber boot
24-1404	AC power adapter
104-4032	USB cable
24-1425	PCA2 Data Recovery Software
21-7006	Tru Spot Smoke Tester
* 24-7224	Compact Sample Conditioner

Instrument Comes Complete With:

- Hard Carry Case
- Probe and Hose Assembly
- Factory Calibrated and Installed Sensors
- Instruction Manual
- Batteries
- Product Boot
- USB Cable
- PC Software
- 2 Year Warranty

All instruments can be upgraded to include combination of CO (high), NO, NO₂ and SO₂

* The Compact Sample Conditioner is recommended when measuring NO₂ and SO₂ to ensure the highest degree of measurement accuracy.

Distributed By:

Esys, The Energy Control Company™
661-833-1902

PCA® 2 ORDERING INFORMATION

MODEL NUMBER	PART NUMBER	SENSOR 1	SENSOR 2	SENSOR 3	SENSOR 4	PRINTER
PCA 2 225	24-8350	O2	CO			
PCA 2 235	24-8351	O2	CO	NO		
PCA 2 245	24-8352	O2	CO	CO (high)		
PCA 2 255	24-8353	O2	CO	SO2		
PCA 2 265	24-8354	O2	CO	NO	NO2	
PCA 2 275	24-8355	O2	CO	NO	SO2	
PCA 2 225 Kit	24-8370	O2	CO			X
PCA 2 235 Kit	24-8371	O2	CO	NO		X
PCA 2 245 Kit	24-8372	O2	CO	CO (high)		X
PCA 2 255 Kit	24-8373	O2	CO	SO2		X
PCA 2 265 Kit	24-8374	O2	CO	NO	NO2	X
PCA 2 275 kit	24-8375	O2	CO	NO	SO2	X

