Bacharach® PCA® 400 Combustion & Emissions Analyzer

4-Gas Combustion & Emissions Analyzer

MSA The Safety Company

10 Standard Fuels Plus Optional Custom Fuels

Includes common fuels like natural gas, oil, propane and kerosene.

Large Color Touch Display

Provides simple operation and easy-to-see results.

Enhanced Data Viewing

Allows you to see data in text, tile or trending format making it easier to interpret results.

Sensor Exchange Program

Eliminates field calibrations and cal gases with simple, pre-calibrated sensor exchange using Near Field Communication (NFC) to transfer calibration data. The B-SMART program includes a Bacharach factory certificate of calibration.

Bluetooth®

Standard Bluetooth® wireless technology enables real-time data streaming to smartphones, tablets.

All Day Power

Typical 12 hour run time with standard Li-Ion rechargeable. 4× AA batteries or AC power also available.

500 Memory Locations

Organize records in folder structure for later viewing and downloads.

Advanced Sensor Features

- 5 year O_2 sensor warranty.
- Automatic Sensor Protection.
- CO-H_2 compensated from 0 - 10,000 ppm.

The Complete Solution

For Portable Combustion and Emission Analysis

1 Extended Probe Options

Available 12, 24 and 36 inch probes make the PCA® 400 adaptable for any application.

2 Sample Line Length Options

Standard 7.5 ft and extended 15 ft sample lines.

3 Sample Line Material Options

Standard tubing or VITONTM tubing for most accurate NOx and SO_2 measurements.

4 Rugged, One-Step Probe Connection

Provides a quick, simple, durable connection to the analyzer.

Specifications	Description
DISPLAY	4.3 in. (10.9 cm) color touch panel LCD
POWER	Rechargeable Li-Ion battery pack, 4× AA batteries or wall adapter (5V USB)
RUN TIME	12 to 14 hours (typical, w/ included LI-Ion battery pack)
SIZE (H×W×D)	10 × 3.8 × 2.5 in (25.4 × 9.7 × 6.4 cm)
WEIGHT	1.5 lb. (0.68 kg) w/ Li-Ion battery pack
FUELS *	Natural gas, coal, oil 2, 4 or 6, propane, wood/biofuel, kerosene, bagasse, digester gas, B5, pellets, KOKS, LEG, LPG, butane, wood chips
WARM-UP TIME	60 seconds
MEMORY	500 sets of records stored locally on instrument
COMMUNICATIONS	USB 2.0 (micro-B), IrDA, Bluetooth® 4.0
APPROVALS	CE
WARRANTY	2 years for instrument, 5 years for O2 sensor
SAMPLE FLOW RATE	0.6 to 0.7 L/min (standard) 1.0 L/min (high flow mode)
STORAGE CONDITIONS	20 to 50 °C (-4 to 122 °F), 15 to 90% RH, non-condensing, 1 atmosphere ± 10%
NORMAL OPERATING CONDITIONS	0 to 45 °C (23 to 113 °F), 15 to 90% RH, non-condensing, 1 atmosphere ± 10%

**Factory default; can be changed through Modbus. Recommended 6 month testing/recalibration*

Sample Conditioning for Accurate Measurements

The PCA® 400 provides accurate readings for CO, O_2 and NO with our standard probe. Optional VitonTM tubing and thermoelectric sample conditioner ensure accurate results in any application, including NO_2 and SO_2 measurements. The sample conditioner cools and filters water from the gas sample, ensuring the tubing stays dry and doesn't absorb portions of the gas and cause low readings.

Low NOx Resolution

When you're testing NOx emissions for MACT compliance, precision is absolutely necessary. The PCA® 400 provides NOx measurements down to 0.1 ppm, providing the most accurate reading possible.

Easy to Service and Maintain

The PCA® 400 is designed to make maintenance easy. With quick access to sensors, batteries, probes and other consumable parts, cost of ownership and down time are significantly reduced.

Rugged and Reliable

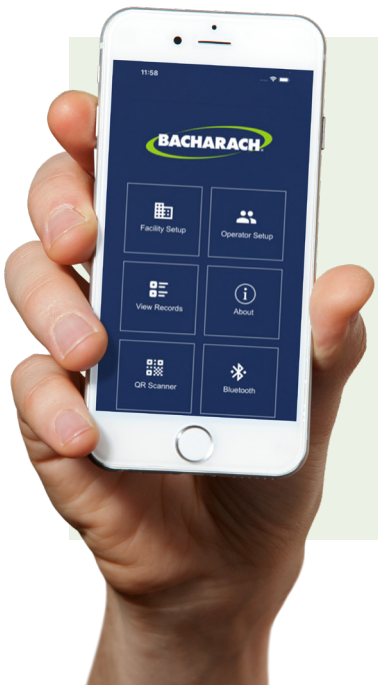
Designed for commercial and industrial environments, the PCA® 400 is rugged and reliable for everyday use. With a rugged one-step probe connection and automatic sensor protection to extend the safe operating range, the PCA® 400 remains ready at your side.

Customized Reporting Options

Easily generate customized reports from the PCA® 400, your computer or mobile device. Reports can be customized to include location and equipment information, your company information, logo and more.

Measurements

Measurement	Range	Display Resolution	Accuracy	Response Time	Standard / Optional
O_2	0 to 20.9%	0.1%	± 0.3% (on flue gas)	T90 < 20 sec	Standard
CO-H_2 COMPENSATED	0 to 10,000 ppm	1 ppm	± 10 ppm (0 to 200) ± 5% of reading (201 to 2,000) ±10% of reading (2,001 to 10,000)	T90 < 40 sec	Optional
CO (HIGH)	0 – 10, 000 ppm (20,000 with dilution) & 0– 40,000 ppm (80,000 with dilution)	10 ppm	± 10 ppm (0 to 100) ± 10% of reading (101 to 40,000)	T90 < 75 sec	Optional
NO	0 to 3,000 ppm	0.1 ppm (0 to 50) 1ppm (>50)	± 3 ppm (0 to 50) ± 5% (51 to 2,000) ± 10% of reading (> 2,000)	T90 < 30 sec	Optional
NO_2	0 to 500 ppm	0.1 ppm (0 to 50) 1ppm (>50)	± 3 ppm (0 to 50) ± 5% (51 to 500)	T90 < 40 sec	Optional
SO_2	0 to 5,000 ppm	1 ppm	± 10 ppm (0 to 200) ± 5% of reading (201 to 2,000) ± 10% of reading (2,001 to 5,000)	T90 < 30 sec	Optional
AMBIENT TEMPERATURE	-20 to 537 °C (-4 to 999 °F)	0.1 C (0.1 °F)	± 1 °C (0 to 100 °C)	T90 < 70 sec	Standard
STACK TEMPERATURE	-20 to 1,200 °C (-4 to 2,192 °F)	1 C (1 °F)	± 2 °C (0 to 124 °C) ± 3 °C (125 to 249 °C) ± 4 °C (250 to 400 °C)	T90 < 50 sec	Standard
DIFFERENTIAL TEMPERATURE	± 600 °C (± 1,112 °F)	0.1 C (0.1 °F)	N/A	N/A	Standard
PRESSURE / DIFFERENTIAL PRESSURE	± 179 mB (± 72 inwc)	0.01 mB (0.01 inwc)	± 0.03 mB (-1 to +1 mB) ± 0.05 mB (-2.5 to -1 and +1 to +2.5mB) ± 3% of rdg. (-100 to -2.5 and +2.5 to +100 mB)	N/A	Standard
FLOW	0 to 1 LPM	0.05 LPM	± 0.1 LPM	N/A	Standard



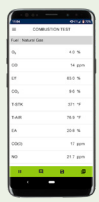
Operate Remotely

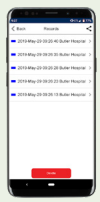
The Combustion mobile app enables remote operation of the instrument from any Android or iOS device. Connect to your instrument using Bluetooth® wireless technology to gain access to your instrument's combustion reading screen where you can make comments, save readings, or even start and stop the pump.

Checking combustion readings, making adjustments, then returning to your analyzer to check again can be a hassle. That's why we've designed the PCA® 400 app for real-time remote operation.

Reports in the Field

With the Bacharach Combustion app, it is easy to build customized reports in the field to include customer profiles with facility and equipment information, along with records of test data. Add comments to data records before sharing reports as PDF, CSV, or XML files.





To learn more, visit *MyBacharach.com/**PCA400***

Calculated Readings

Calculation	Range	Display Resolution	Instrument Version
EFFICIENCY (HHV)	0.1 to 100%	0.1%	North American, Siegert
CO_2 (DRY BASIS)	0.1 to a fuel dependent max in %	0.1%	North American, Siegert
NO_x	0 to 3500 ppm	0.1 ppm (0 to 50), 1 ppm (> 50)	North American, Siegert
CO REF TO O_2	0 to 9999 ppm	1 ppm	North American, Siegert
NO REF TO O_2	0 to 9999 ppm	1 ppm	North American, Siegert
NO_2 REF TO O_2	0 to 9999 ppm	1 ppm	North American, Siegert
NO_x REF TO O_2	0 to 9999 ppm	1 ppm	North American, Siegert
SO_2 REF TO O_2	0 to 9999 ppm	1 ppm	North American, Siegert
EXCESS AIR	1 to 250%	1%	North American
CO/CO_2 RATIO	0.0001 to fuel dependent max	0.0001	Siegert
ETA (LHV)	0 to 115%	0.1%	Siegert
STACK LOSS	0.1 to 100%	0.1%	Siegert
LAMBDA	1 to 9.55	0.01	Siegert

PCA® 400 Ordering information

P/N	CO	CO_H	NO	SO_2	NO_2	Printer	Hose
2410-1110	●						Buna-N
2411-1110	●		●				Buna-N
2412-1310	●		●		●		Viton
2413-1310	●		●	●			Viton
2414-1310	●			●			Viton
2420-1110		●					Buna-N
2410-1112	●					●	Buna-N
2411-1112	●		●			●	Buna-N
2412-1312	●		●		●	●	Viton
2413-1312	●		●	●		●	Viton
2414-1312	●			●		●	Viton
2420-1112		●				●	Buna-N

Probe and Hose Assemblies

0024-3231	Probe Handle Assembly with 12 in. probe tube
0024-3232	Probe Handle Assembly with 24 in. probe tube
0024-3233	Probe Handle Assembly with 36 in. probe tube
0024-3234	Hose Assembly, Standard tubing, 7.5 ft.
0024-3235	Hose Assembly, Standard tubing, 15 ft.
0024-3236	Hose Assembly, Viton™, 7.5 ft.
0024-3237	Extended Hose Assembly, Viton™, 15 ft.

Accessories

0024-1680	Bluetooth® printer kit
0021-7006	Tru Spot® Smoke Kit
0104-1797	Thermocouple - 10 ft. for combustion air temperature
0104-1798	Thermocouple - 1 in. for ambient air temperature
0024-8242	Differential Pressure and Temperature Kit
0024-3150	High-temperature particulate filter

Replacement Sensors

0024-1622	O_2 Sensor
0024-1687	Pre-Calibrated CO Sensor
0024-1660	Non-Calibrated CO Sensor
0024-1542	Pre-Calibrated CO_{HIGH} Sensor
0024-0997	Non-Calibrated CO_{HIGH} Sensor
0024-1543	Pre-Calibrated SO_2 Sensor
0024-0998	Non-Calibrated SO_2 Sensor
0024-1544	Pre-Calibrated NO_2 Sensor
0024-1027	Non-Calibrated NO_2 Sensor
0024-1691	Pre-Calibrated NO Sensor
0024-0881	Non-Calibrated NO Sensor
0000-3400	3-Year B-SMART™ Subscription

Sample Conditioner

0024-8558	Active Sample Conditioner

MSA operates in over 40 countries worldwide. To find an MSA office near you, please visit ***MSAsafety.com/offices***.

4900-053-MC / 06.2022