BACHARACH

PCA® 400

Combustion Analyzer

for Commercial & Light Industrial Use

Combustion & Emissions

P/N: 0024-9553 | January 2018 Revision 1

Quick Start Guide

For more detailed product information, scan here or visit **www.mybacharach.com** to access the PCA® 400 User Manual **(P/N 0024-9551)**.

1. Introduction

The PCA® 400 is a commercial grade, hand-held combustion and emissions analyzer for on-demand or semi-continuous sampling of light industrial, institutional, commercial, and residential furnaces, boilers, and appliances. The base instrument is supplied with a probe and hose assembly, factory calibrated and installed sensors, printer interface, hard carry case, filters, USB cable, PC Software, AC adapter, and rechargeable lithium-ion battery pack. The reporting kit version includes (in addition to the base configuration) a Bluetooth® + IrDA printer.

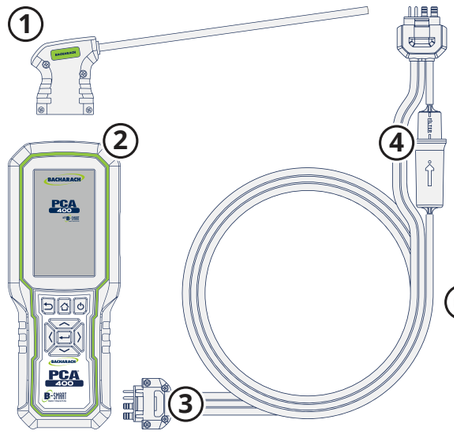
2. Safety Instructions

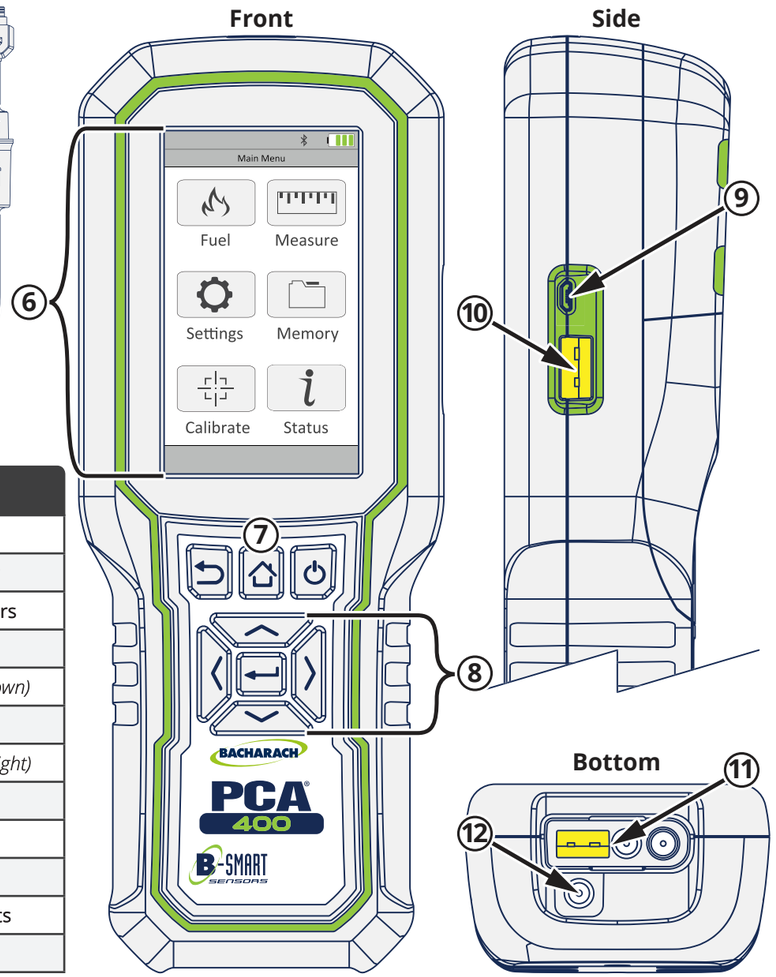
CODE COMPLIANCE: Comply with all local and national laws, rules and regulations associated with this equipment. Operators should be aware of the regulations and standards in their industry / country for the operation of this analyzer.

WARNING: This analyzer is not intended to be used as a safety device.

WARNING: This analyzer has not been designed to be intrinsically safe for use in areas classified as hazardous locations.

3. Component Overview

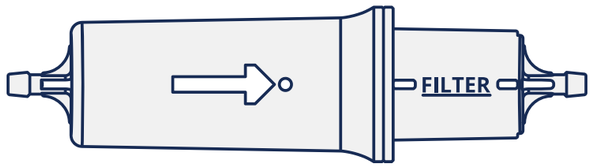




#	Description
1	Pistol-Grip Probe
2	PCA® 400 Combustion Analyzer
3	Sample Line with Quick Connectors
4	Water Trap & Filter Assembly
5	IrDA Communications Port *(Not Shown)*
6	Full Color LCD Touch Screen
7	Back, Home & Power Keys *(Left to Right)*
8	Navigation & Enter Keys
9	Micro-B USB Connector
10	T-Air Connector
11	T-Stack Connector & Sample Ports
12	Pressure Low Side *(-ΔP)*

4. Prerequisites

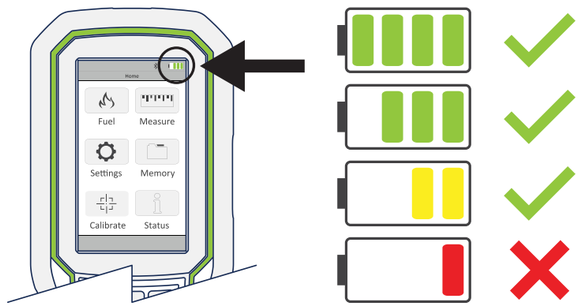
IMPORTANT: Ensure that the water trap assembly is clean, dry, and properly assembled.



IMPORTANT: Check for obvious signs of splits and / or cracks in the tubing.

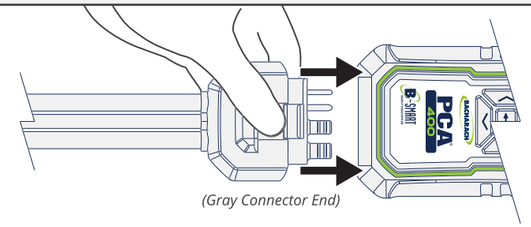
IMPORTANT: Perform routine maintenance (replacing sensors, calibrating, etc.) as outlined in the PCA® 400 User Manual **(P/N 0024-9551)**.

IMPORTANT: Ensure that the analyzer has sufficient charge before operation. If in doubt, recharge lithium-ion battery, replace disposable batteries, or provide power via the AC adapter and USB cable.

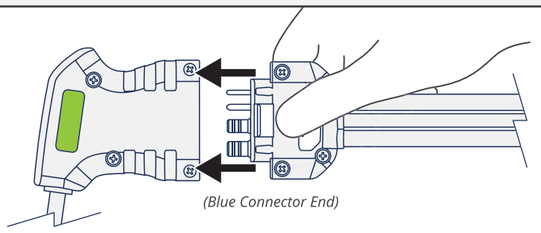


5. Hardware Setup

STEP 1 | Connect Combustion Analyzer to Sample Line



STEP 2 | Connect Pistol-Grip Probe to Sample Line



STEP 3 | Press Power Button *(Starts 60-Second Warm-Up)*

IMPORTANT: Perform power up and initialization in fresh air to ensure proper calibration.

IMPORTANT: Address / acknowledge any faults or errors discovered during initialization.

BACHARACH
THE MEASURABLE DIFFERENCE

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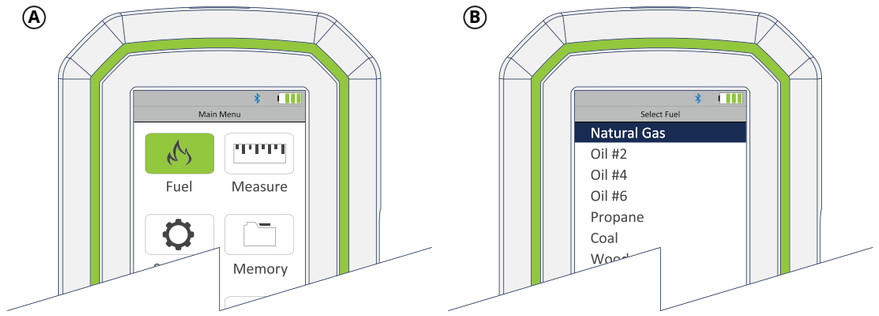
6. Operation Overview

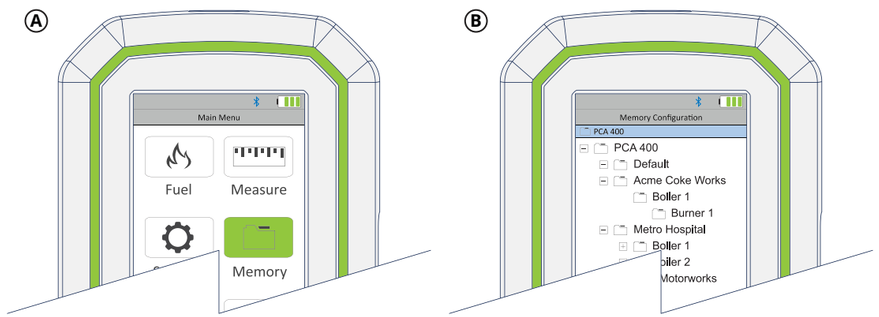
STEP 1 | Select Fuel Type

Access the Fuel Menu (🔥) from the Main Menu and select the type of fuel used in the application being measured.



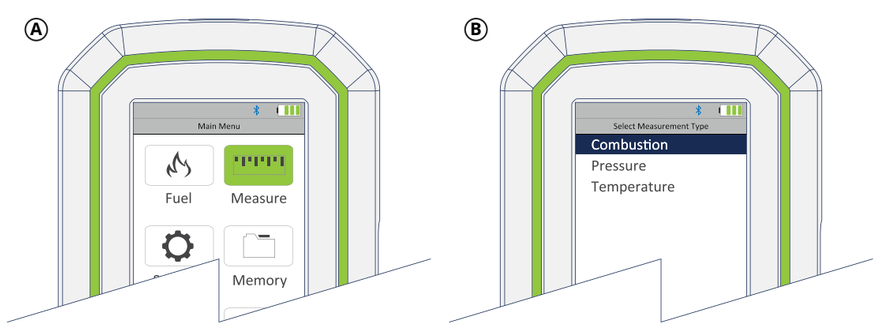
STEP 2 | Configure Memory *(Optional)*

Access the Memory Menu (🗀) and select the folder / memory location where data will be saved; touch folder / memory location to access memory configuration screen. *(If no location is selected, analysis results will be saved to the "Default" folder.)*



STEP 3 | Select Measurement Type

Access the Measure Menu (📏) from the Main Menu and select the type of test which you will be performing.



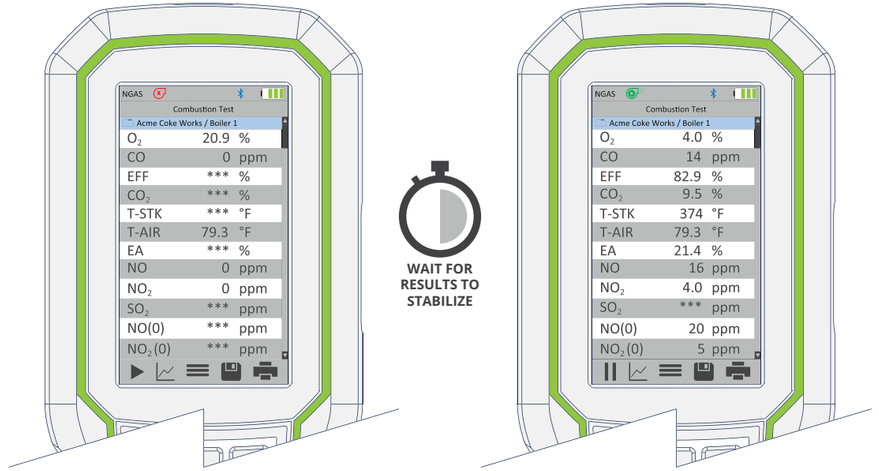
Warning: When testing an appliance, a full visual inspection should be performed to ensure its safe operation.

STEP 4 | Place Probe in Measurement Area

Position the probe tip in the center of the measurement area to ensure consistent readings.

STEP 5 | Perform Combustion Analysis

Press the Start Icon (▶) to start the pump and begin analysis. After the results have stabilized, press the Pause Icon (**II**) to stop the pump. *(The status of the pump is indicated at the top of the analyzer screen: 🔥 indicates that the pump is on, 🚫 indicates that the pump is off.)*



STEP 6 | Save & Print Results of Combustion Analysis

After stopping the pump, press the Save Icon (💾) to save the data to the folder / memory location configured in step 2. After saving the data, press the Print Icon (🖶) to print the test results using a connected IrDA + Bluetooth® Printer. *(The data display can be toggled between several display options by pressing 📈.)*

7. Post-Analysis Maintenance

CAUTION: The probe may be hot after analysis and can cause bodily harm and or damage the analyzer. Allow the probe sufficient time to cool before handling or storing in the supplied instrument case.

The probe and sample line may become dirty during normal use and should be cleaned regularly to ensure proper function. The following maintenance should be performed after each use:

- ☐ **Allow the analyzer to purge in fresh air for a minimum of 10-minutes or until O_2 is greater than 20% & other measured readings are less than 5ppm.**
- ☐ **Remove excess moisture from Water Trap, Sample Line and Pistol-Grip Probe.**
- ☐ **Clean debris from probe and analyzer.**
- ☐ **Charge analyzer batteries before storage.**

8. Parts & Accessories

IMPORTANT: Use only original equipment components with this device.

CAUTION: Except for sensor and battery replacement, this analyzer should only be opened and / or serviced by authorized Bacharach personnel. Failure to comply may void the warranty.

Product	Description / Part Number	
 **Sample Conditioner**	Description:	The Sample Conditioner extracts water vapor from samples, allowing the PCA® 400 to accurately read levels of NO_2 and or SO_2.
	P/N:	0024-7400
 **Viton® Sample Line**	Description:	7.5' Viton® Sample Line with quick connectors allows the PCA® 400 to accurately read levels of NO_2 and or SO_2.
	P/N:	0024-3236
 **IrDA + Bluetooth® Printer**	Description:	The IrDA + Bluetooth® Printer allows technicians to print reports directly from the PCA® 400 without a wired connection.
	P/N:	0024-1680
Printer Paper	P/N	0024-1310 *(contains 5 rolls of paper)*
Water Trap Filters	P/N	0007-1644 *(contains 3 filters)*
O_2 Sensor	P/N	0024-1652
CO_{LOW} Sensor	P/N	0024-1687
CO_{HIGH} Sensor	P/N	0024-1542
SO_2 Sensor	P/N	0024-1543
NO_2 Sensor	P/N	0024-1544
NO Sensor	P/N	0024-1691