



# MODEL 5000 SERIES

PORTABLE FLUE GAS ANALYZER FOR ANY COMBINATION OF OXYGEN, CO<sub>2</sub>, CO, NO<sub>x</sub>, SO<sub>2</sub> AND STACK TEMPERATURE

## APPLICATIONS

*For checking combustion efficiency, burner and control performance, detection of air infiltration and CO/CO<sub>2</sub>/SO<sub>2</sub>/NO<sub>x</sub> emissions from commercial, industrial and residential furnaces, heaters and boilers.*



Model 5004PT

## OPTIONS

- Sample pre-cooler
- RS-232 or RS-485 output
- Built in printer (add 'P' suffix)
- Stack temperature readout
- NO<sub>x</sub> as NO plus NO<sub>2</sub>
- Data logger for PC computer
- High temp. sampling probe

## MODELS

**5001:** O<sub>2</sub> and CO

**5002:** O<sub>2</sub>, CO and NO<sub>x</sub>

**5003:** O<sub>2</sub>, CO<sub>2</sub> and CO

**5004:** O<sub>2</sub>, CO<sub>2</sub>, CO and NO<sub>x</sub>

**5005:** O<sub>2</sub>, CO<sub>2</sub>, CO, NO<sub>x</sub> and SO<sub>2</sub>

For stack temp. add 'T' suffix. For NO<sub>x</sub> as NO + NO<sub>2</sub>, add 'X' suffix.

## FEATURES

- Fast and accurate response
- Simple to operate - compact size
- Easy to maintain
- Use on any fuel
- Digital readouts with switchable backlight
- Built in sample pump
- Rechargeable battery operation
- Long-life detector cells for O<sub>2</sub>, CO, SO<sub>2</sub> and NO<sub>x</sub>. Thermocouple temperature probe
- **CO<sub>2</sub> actually measured by infra red detector - not calculated**
- Wide CO measurement range
- NO<sub>x</sub> can be NO only or combined NO and NO<sub>2</sub>
- Rapid reading recovery on CO, NO<sub>x</sub> or SO<sub>2</sub> 'overdose'
- Pays for itself in months through fuel savings
- Rugged enclosure with carrying handle

**NOVA ANALYTICAL SYSTEMS INC.**

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## DESCRIPTION

The Nova Model 5000 Series Portable Flue Gas Analyzers have been designed for accuracy, reliability, ease of use and ease of service, providing a detailed analysis of flue gas composition. They use customer replaceable sensors which respond quickly to the oxygen, CO<sub>2</sub>, SO<sub>2</sub>, CO and NO<sub>x</sub> (as NO) present in the flue gas sample. (As an option, NO<sub>x</sub> can be from combined NO plus NO<sub>2</sub>.) The O<sub>2</sub> sensor life expectancy is 3-4 years. The CO, SO<sub>2</sub> and NO<sub>x</sub> sensor life is 2-3 years. The infra red CO<sub>2</sub> sensor life is infinite under normal conditions of use.

In operation, a built in sample pump draws in the flue gas sample through the S.S. probe, 12 ft. sample hose, water separating filter, secondary filter, teflon liquid blocker and flowmeter then on to the gas sensors. The detected O<sub>2</sub>, CO<sub>2</sub>, CO, SO<sub>2</sub> and NO<sub>x</sub> are displayed on separate large LCD meters with switchable backlights for use in dark areas.

A Nova 5000 Series option also provides a stack temperature reading. The type K thermocouple sensor is built into the sample probe.

A rechargeable 'gel cell' battery provides enough power for about 4-5 hours of continuous operation and the analyzer can be used while it is being recharged. A red LED tells when to recharge and a green LED verifies that it is receiving recharging power.

The Model 5000 Series case is rugged, dust and water resistant when closed. A built in printer, which also shows date and time, is optionally available.

A built in datalogger is also available which can be downloaded to a PC computer.

## CALIBRATION

On ambient air for O<sub>2</sub> span, CO<sub>2</sub> zero, CO zero, SO<sub>2</sub> zero and NO<sub>x</sub> zero.

On analyzed gas mixtures of CO<sub>2</sub> and CO in nitrogen, NO in nitrogen and SO<sub>2</sub> in nitrogen for span (also zeroes O<sub>2</sub>).

## SPECIFICATIONS

DESCRIPTION	
<b>Method of Detection:</b>	Customer replaceable electrochemical oxygen, CO, SO <sub>2</sub> and NO sensors. Solid state infra red detector for CO <sub>2</sub> .
<b>Ranges:</b>	0-30.0% Oxygen 0-9999 PPM CO 0-20.0% CO <sub>2</sub> 0-200 to 0-2000 PPM NO <sub>x</sub> ranges available (as NO or NO plus NO <sub>2</sub> ) 0-200 to 0-2000 PPM SO <sub>2</sub> ranges available 0-1800°F (0-1000°C) net stack temperature
<b>Display:</b>	LCD digital with switchable backlighting
<b>Accuracy and Repeatability:</b>	± 2% of full scale for O <sub>2</sub> and CO <sub>2</sub> SO <sub>2</sub> , CO and NO <sub>x</sub> : ± 2% of reading or 2 PPM, whichever is higher
<b>Drift:</b>	<2% full scale per 8 hours of continuous operation
<b>Response Time:</b>	<30 seconds for 90% of O <sub>2</sub> , CO <sub>2</sub> , CO and SO <sub>2</sub> <60 seconds for 90% NO
<b>Temperature Ranges:</b>	<b>Operating:</b> 32 to 122°F (0 to 50°C) <b>Sample:</b> up to 1200°F (635°C) (std. probe)
<b>Size:</b>	14" W x 10-1/2" D x 6" H (355 x 266 x 152 mm)
<b>Weight:</b>	Approx. 12 lbs. (5.5 kg)
<b>Power:</b>	12v battery operation. 115VAC 60Hz for recharging (other voltages available)

*Nova reserves the right to specification changes which may occur with advances in design without prior notice.*

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