

CA-CALC™

Combustion Analyzers

Series CA-6200

TSI's CA-CALC portable electronic combustion analyzer is a rugged, fast-response, easy-to-use instrument ideal for tuning burners for maximum efficiency and safety—from large industrial systems to small residential appliances. The basic unit measures O₂, CO, draft, and ambient and stack temperatures. Optional sensors can be added for measuring NO, NO₂, SO₂ and high CO concentrations.



Combustion Analysis Made Simple

- Real-time measurements in seconds after power-up
- Calculates efficiency, excess air, %CO₂ and emission rates
- Provides NO_x values (models with NO sensor only)
- User-adjustable CO high limit pump shutdown protects CO sensor
- Zoom function simplifies viewing of critical parameters
- Easy-to-understand menus and icon-driven commands
- Emission gas concentrations use the adjustable O₂ reference

Advanced Sensor Technology

- Field re-calibration of sensors saves time and money
- Factory calibrated, field-installable replacement sensors
- Four sensor slots designed for easy field upgrades
- CO sensor is hydrogen compensated

Superior Data Logging and Printing

- Stores up to 350 samples for 35 sites and 75 systems
- On-site access of customer histories
- Data sorted by customer, system or individual sample for printouts and report generation
- Stored data include fuel parameters and are time/date stamped
- Download stored data for report management
- Optional printer provides hard copy output

Additional Benefits of the CA-CALC

- Battery system provides 24 hours of continuous operation
- Eight factory-set fuels are user-adjustable to improve accuracy
- Five user-defined fuels with easy field set-up
- Status of the internal pump monitored continuously

Applications

- Tune burners in industrial boilers, heat exchangers, residential furnaces, process heaters and other combustion equipment
- Supplement regular boiler system maintenance checks to minimize maintenance and repair costs
- Spot check levels of NO, NO₂ and SO₂
- Perform emissions control equipment maintenance checks
- Measure flue gas and combustion inlet air temperatures
- Check carbon monoxide safety in boiler rooms



CA-CALC Series CA-6200 Specifications

Oxygen (O₂)*:

Range: 0 to 25%
Resolution: 0.1%

Carbon Monoxide (CO)—H₂ Compensated*:

Range: 0 to 5,000 ppm
Resolution: 1 ppm

Carbon Monoxide (CO)—High Concentration*:

Range: 0 to 20,000 ppm
Resolution: 1 ppm

Nitric Oxide (NO)*:

Range: 0 to 4,000 ppm
Resolution: 1 ppm

Sulfur Dioxide (SO₂)*:

Range: 0 to 4,000 ppm
Resolution: 1 ppm

Nitrogen Dioxide (NO₂)*:

Range: 0 to 500 ppm
Resolution: 0.1 ppm

Carbon Dioxide (CO₂): Calculated from O₂ and fuel type

Excess Air (%EA): 0 to 1,000%

Efficiency (E_{net} and E_{gr}): 0 to 125%

Stack Loss: 0 to 100%

Supply Temperature: -22 to 392°F (-30 to 200°C)

Flue Gas Temperature: 32 to 1,800°F (0 to 1,000°C)

Draft: ±30 in. H₂O (±80mBar)

* Electrochemical Sensor

Specifications subject to change without notice. Specifications are a condensed version. For more information contact TSI.

Operating Conditions:

Temperature Range:

Operating: 32 to 122°F (0 to 45°C)
Storage: -20 to 140°F (-30 to 60°C)
Max. Probe Temperature: 1,800°F (1,000°C)

Instrument Humidity Range:

Continuous: 15 to 90%
Intermittent: 0 to 99%

General Data

Pump:

Flow Rate: Nominal 700 cc/min

Standard Sampling Probe:

Materials: Stainless steel/neoprene
Length: 12 in. (30 cm); 9 ft (2.75 m) sampling tube
Diameter: 5/16 in. (0.8 cm)

Instrument Dimensions:

Weight: 2.5 lb (1.14 kg); 3.9 lb (1.75 kg) with probe

Display: Approx. 1/4-VGA B/W

Communication Interface:

Type: Serial
Baud Rate: 1,200 to 19,200

Power Requirements:

Batteries: 4 "C" cell alkaline batteries
Battery Life: >24 hr (pump on); >48 hr (pump off)
AC Adapter: Use only TSI supplied part
Backup Battery: Lithium
Backup Battery Life: 3 yrs

Packaged Model Ordering Information

| | CA-6210 | CA-6211 | CA-6212 | CA-6213 | CA-6214 | CA-6215 |
|---|---------|---------|---------|---------|---------|---------|
| 12 in. probe with a 9 ft sampling tube | • | • | • | | • | |
| O ₂ Sensor | • | • | • | • | • | • |
| CO Sensor—H ₂ Compensated | • | • | • | • | • | • |
| NO Sensor | | • | | • | • | • |
| NO ₂ Sensor | | | | • | | • |
| SO ₂ Sensor | | | | • | | |
| CO Sensor—High Concentration | | | • | | • | |
| 12 in. probe with a 9 ft teflon-lined emissions sampling tube | | | | • | | • |

All packaged models also include a carrying case, power supply, batteries, water trap, manual and calibration certificate.



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