

PRODUCT DATA SHEET

CEM/Oxygen Analyzer

Extractive net oxygen (O₂) analyzer for use in a wet or dry gas continuous emission monitoring (CEM) system or instrument cabinet

For applications where a sample is taken to a remote analyzer location, the cost-effective CEM/O₂ analyzer provides advanced system features that integrate into your overall emissions monitoring system.

The analyzer complies with 40 CFR Part 60 and Part 75 Federal EPA performance specification requirements along with regional requirements for O₂ monitors.

Extractive analyzers

Extractive analyzers are located remotely from the sample point. The sample can be delivered to the analyzer through a heated sample line (hot or wet) or cooled to remove the moisture (dry). With zirconium oxide (ZrO₂), either method can be used. Most of the sample passes straight through the analyzer. A portion flows into the convection loop and is measured by the O₂ cell.

Series 2000 control unit

Series 2000 microprocessor control provides four-line local display, analog outputs, alarms, expanded system diagnostics, autocalibration option, RS485 communication, and optional Humox O₂ wet/dry calculation software for correlated flue gas moisture measurement.



KEY BENEFITS

- Wet or dry gas
- Small footprint
- Easy to operate



APPLICATIONS

- CEM system
- Wet or dry O₂ measurement



KEY MARKETS

- Industrial

PERFORMANCE SPECIFICATIONS

Sensor Specifications

Principle of operation	ZrO ₂
Operating range	0.1-100% O ₂
Accuracy	±0.75% of reading or 0.05% O ₂ , whichever is greater
Response time	Less than 4 seconds at 2 scfh from 2% O ₂ to 20% O ₂
Drift	<0.1% of cell output per month, (<0.005% O ₂ per month with 2% O ₂ applied)
Max. inlet temperature	204°C (400°F)
Sample pressure	±2 psig max (0.14 kg/cm ²)
Sample flow	2 to 20 scfh (0.94 to 9.4 L/min)
Environment	Ambient temperature: -18 to 50°C (0 to 122°F). Relative humidity: 10-90%, non-condensing
Enclosure	Indoor use only
Power requirements	115 VAC, ±10%, 47-63 Hz; 230 VAC, ±10%, 47-63 Hz, 1670 VA max.
Calibration gas requirement	Use calibration gases at 2-20 scfh (0.94-9.4 L/min) Zero gas: From 0.1-10% O ₂ , balance nitrogen Span gas: Minimum one decade above zero gas (10 times greater)

Series 2000 Control Unit

Display	Four-line x 20-character vacuum fluorescent. Displays combinations of time and date, cell temperature, user-programmable text, thermocouple mV or cell mV. Password protection, programmable pressure compensation and context sensitive help are also provided
Analog output	Two isolated linear current outputs. Select O ₂ , cell temperature, thermocouple mV or cell mV. Each output can be 4-20 mA, 0-20 mA, 20-4 mA or 20-0 mA, and is fully scalable. Hold or track during calibration and select degree of damping. Maximum load 1200 ohms
Alarms	Two independent O ₂ alarms, each high or low selectable. One alarm can be assigned as O ₂ , calibrate or verify. Set relays to energize or de-energize on alarm
Contact rating	0.5A, 30V, 10VA max. non-inductive load, AC or DC
Diagnostics	Watchdog timer and service alarms. System test for A/D, RAM, EEPROM and keypad. Display line four reserved for full text error and diagnostic messages. 20-entry exception log for automatically detected system events
Communications	RS-485, two-way addressable
Environment	Ambient temperature: -10 to 50°C (14 to 122°F). Relative humidity: 10-80%, non-condensing
Enclosure	Standard general purpose (GP) 19" rack mount. Optional GP panel or wall mount, weatherproof NEMA 4 (IP56) and NEMA 4X (IP56) enclosures available. All are UL Listed for NEC Class I, Division 2 areas
Calibration	Store last calibration and verification data. Selectable calibration gas run time and process recovery time Timed automatic calibration with optional Remote Calibration Unit. O ₂ cell lifetime extender Single gas verification that analyzer is within calibration limits
Power requirements	Nominal 115-230 VAC ±10%, 47-63 Hz, 75 VA max.
System compliance	EMC directive 89/336/EEC. Low voltage directive 73/23/EEC

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