

PRODUCT DATA SHEET

CEM O₂/TM Analyzer

Fast, reliable performance for sample streams with particulate or other components

The CEM O₂/TM has a flow-insensitive sample design and is suitable for sample streams with condensable and particulate.

The CEM/O₂ sensor meets the replacement and integration needs of hot-wet extractive continuous emissions monitoring (CEM) systems integrators. The sample inlet feeds a straight-run sample line with center mounted chimney-effect convection stack for continuous sampling. The compact sensor housing fits easily into a CEM cabinet.

Series 2000 control unit

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

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.



KEY BENEFITS

- Flow-insensitive sample design
- Suitable for sample streams with condensate and particulates



APPLICATIONS

- Specialty gases trace O₂
- Ultra-high purity of inert gases



KEY MARKETS

- Industrial

PERFORMANCE SPECIFICATIONS

Sensor Specifications

Principle of operation	Zirconium oxide (ZrO ₂)
Operating range	1 ppm to 100% O ₂
Accuracy	Percent: ± 0.75 of reading or 0.05% O ₂ , whichever is greater; ppm: ± 2 of reading or 0.5 ppm O ₂ absolute, whichever is greater
Response time	<10 seconds at 1.0 L/min (2 scfh) to 90% of 2-decade step change
Repeatability	Percent: ± 0.5 of reading or 0.1% O ₂ absolute, whichever is greater; ppm: ± 0.5 of reading or 0.1 ppm O ₂ absolute, whichever is greater
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 flow	1.0 L/min (2 scfh)
Environment	Ambient temp: -18 to 50°C (0 to 122°F); Relative humidity: 10 to 90%, noncondensing
Enclosure	Indoor use only
Power requirement	115 VAC, ± 10 , 47-63 Hz; 230 VAC, ± 10 , 47-63 Hz, 1670 VA max.

Series 2000 Control Unit Specifications

Display	Four-line x 20 character vacuum fluorescent Displays combinations of O ₂ , 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 ohm
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. noninductive 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 temp: -10 to 50°C (14 to 122°F)
Relative humidity	10 to 80%, noncondensing
Enclosure	Standard GP (general purpose) 19" rack mount. Optional GP panel or wall mount, weatherproof NEMA 4 (IP56) and NEMA 4X (IP66) enclosures available. All are UL Listed for NEC Class I, Division 2 areas
Power requirement	Nominal 115- 230 VAC $\pm 10\%$, 47-63 Hz, 75 VA max
System compliance	EMC directive 2004/108/EC; Low voltage directive 73/23/EEC

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