

## PRODUCT DATA SHEET

# CEM O<sub>2</sub>/TM Analyzer

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

The CEM O<sub>2</sub>/TM has a flow-insensitive sample design and is suitable for sample streams with condensable and particulate.

The CEM/O<sub>2</sub> 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 (O<sub>2</sub>) 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 (ZrO<sub>2</sub>) 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 O<sub>2</sub> cell.



### KEY BENEFITS

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

### APPLICATIONS

- Specialty gases trace O<sub>2</sub>
- Ultra-high purity of inert gases

### KEY MARKETS

- Industrial

## PERFORMANCE SPECIFICATIONS

## Sensor Specifications

<b>Principle of operation</b>	Zirconium oxide (Z <sub>2</sub> O <sub>2</sub> )
<b>Operating range</b>	1 ppm to 100% O <sub>2</sub>
<b>Accuracy</b>	Percent: ±0.75 of reading or 0.05% O <sub>2</sub> , whichever is greater; ppm: ±2 of reading or 0.5 ppm O <sub>2</sub> absolute, whichever is greater
<b>Response time</b>	<10 seconds at 1.0 L/min (2 scfh) to 90% of 2-decade step change
<b>Repeatability</b>	Percent: ±0.5 of reading or 0.1% O <sub>2</sub> absolute, whichever is greater; ppm: ±0.5 of reading or 0.1 ppm O <sub>2</sub> absolute, whichever is greater
<b>Drift</b>	<0.1% of cell output per month; <0.005% O <sub>2</sub> per month with 2% O <sub>2</sub> applied
<b>Max inlet temperature</b>	204°C (400°F)
<b>Sample flow</b>	1.0 L/min (2 scfh)
<b>Environment</b>	Ambient temp: -18 to 50°C (0 to 122°F); Relative humidity: 10 to 90%, noncondensing
<b>Enclosure</b>	Indoor use only
<b>Power requirement</b>	115 VAC, ±10, 47-63 Hz; 230 VAC, ±10, 47- 63 Hz, 1670 VA max.

## Series 2000 Control Unit Specifications

<b>Display</b>	Four-line x 20 character vacuum fluorescent Displays combinations of O <sub>2</sub> , 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
<b>Analog output</b>	Two isolated linear current outputs. Select O <sub>2</sub> , 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
<b>Alarms</b>	Two independent O <sub>2</sub> alarms, each high or low selectable. One alarm can be assigned as O <sub>2</sub> , calibrate or verify Set relays to energize or de-energize on alarm
<b>Contact rating</b>	0.5A, 30V 10VA max. noninductive load, AC or DC
<b>Diagnostics</b>	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
<b>Communications</b>	RS-485, two-way addressable
<b>Environment</b>	Ambient temp: -10 to 50°C (14 to 122°F)
<b>Relative humidity</b>	10 to 80%, noncondensing
<b>Enclosure</b>	Standard GP (general purpose) 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
<b>Power requirement</b>	Nominal 115- 230 VAC ±10%, 47-63 Hz, 75 VA max
<b>System compliance</b>	EMC directive 2004/108/EC; Low voltage directive 73/23/EEC

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