

CEM O₂ OXYGEN ANALYZER AND OPTIONS

The CEM/O₂ sensor is designed to meet the replacement and integration needs of hot-wet extractive CEM systems integrators. The sample inlet feeds a straight-run sample line with center mounted chimney-effect convection stack for continuous sampling. Compact sensor housing fits easily into CEM cabinet.

SPECIFICATIONS

Principle of Operation: Zirconium oxide

Operating Range: 0.1% to 100% O₂

Accuracy: ± 0.75% of reading or 0.05% O₂, whichever is greater

Response Time: < 4 seconds at 2 scfh from 2% O₂ to 20% O₂

Drift: < 0.1% of cell output per month (< 0.005% O₂ per month with 2% O₂ applied)

Max. Inlet Temp.: 400°F (204°C)

Sample Pressure: ± 2 psig max (0.14 kg/cm²)

Sample Flow: 2 to 20 scfh (0.94 to 9.4 L/min.)

Environment:

Ambient Temp: 0°F to 122°F (-18°C to 50°C)

Relative Humidity: 10% to 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 Requirements:

Use calibration gases @ 2 to 20 scfh (0.94 to 9.4 L/min.)

Zero Gas: 0.1% to 10% O₂, balance N₂

Span Gas: Minimum one decade above zero gas (10 times greater)



There are two control options available for the CEM/O₂ analyzer.

IQ SERIES TRANSMITTER

Handheld or dedicated wall mount IQ Links provide a local interface to the Thermox line of Smart Sensors using RS-232 communications. The IQ links can be used to set up and display system parameters, initiate calibrations, and perform system tests and troubleshooting. The handheld link can be plugged into any Thermox IQ Analyzer. The dedicated wall mount version is hard wired to a specific analyzer but can be rewired depending on plant needs. Both the hand-held and wall mount terminals are approved for Class I, Division 2, Groups A, B, C and D.

The handheld and dedicated wall mount IQ Links work in cooperation with the Series 2000 Host, which can be used to set up to 32 analyzers via an RS-485.



Series 2000 Control Unit

2000 SERIES MICROPROCESSOR CONTROL

Display: Four line x 20 character vacuum fluorescent. Displays combinations of oxygen 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 O₂, 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 oxygen alarms, each high or low selectable. One alarm can be assigned as oxygen, calibrate or verify. Set relays to energize or de-energize on alarm.

Contact Rating: 1A, 30V max. noninductive load, AC or DC

Diagnostics: Watchdog timer and service alarms. System test for A/D, RAM, EEPROM and keypad. Display line 4 reserved for full text

error and diagnostic messages. Twenty entry exception log for automatically detected system events.

Communications: RS-485, 2-way addressable

Environment:

Ambient Temp: 14°F to 122°F (-10°C to 50°C)

Relative Humidity: 10% to 80%, non-condensing

Enclosure: 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.

Calibration: Store last calibration and verification data. Selectable calibration gas run time and process recovery time. Timed automatic calibration with optional Remote Calibration Unit. Oxygen 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 2004/108/EC
Low Voltage Directive 73/23/EEC

CEM O₂/TM OXYGEN ANALYZER

SPECIFICATIONS

Principle of Operation: Zirconium oxide

Operating Range: 1 ppm to 100% O₂

Accuracy:

Percent: ± 0.75% of reading or 0.05% O₂, whichever is greater

PPM: ± 2% of reading or 0.5 ppm O₂ 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% O₂ absolute, whichever is greater

PPM: ± 0.5% of reading or 0.1 ppm O₂ absolute, whichever is greater

Drift: < 0.1% of cell output per month;

< 0.005% O₂ per month with 2% O₂ applied

Maximum Inlet Temp: 400°F (204°C)

Sample Flow: 1.0 L/min (2 scfh)

Environment:

Ambient Temp: 0°F to 122°F (-18°C to 50°C)

Relative Humidity: 10% to 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 Flow Rate: 1.0 L/min (2 scfh)

Zero Gas: 0.1 PPM to 10% O₂, balance N₂

Span Gas: Minimum one decade above zero gas (10 times greater)

NOTE: Can be used with the Series 2000 Control Unit

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