

CG1000-RTP Oxygen Analyzer

Improves your yield by detecting oxygen contamination at the parts-per-million level

BENEFITS

- || **Fast Response over Wide Operating Range**
Responds rapidly over an operating range of 0.1 PPM to 100% oxygen. The CG1000-RTP can be used to detect oxygen contamination and monitor the purge cycle
- || **Easy to Integrate into Tool Controller and Data Acquisition System**
The CG1000-RTP is equipped with an RS-232 or optional RS-485 port. A simple communications protocol allows efficient integration with the tool controller. Analog 4-20 mA outputs and I/O alarms are available.
- || **Easy-to-Use, Menu-Driven Software**
Incorporates user-friendly software with helpful messages so that you can begin to use the CG1000-RTP immediately. Advanced software diagnostics and on-line help simplify operations.
- || **Electronic Flow Sensor**
Reliably monitors the flow of gases into the analyzer even providing a flow alarm should the flow stop. Potential for leaks and the high maintenance associated with mechanical flow meters are virtually eliminated.
- || **Zirconium Oxide Sensor**
Will not fail to a zero oxygen reading. It is always protected - something not possible with other sensor technologies.

DESCRIPTION

Rapid Thermal Processing (RTP) and fast ramp mini-batch furnaces represent a major technological shift in semiconductor fabrication technology. The advantages offered by these processes, however, can quickly be negated if there is not positive protection from the damaging effects of oxygen contamination.

The importance of oxygen contamination control is best illustrated in the deposition of the titanium silicide used to assure adequate conductivity between the silicon material and

the overlaying metal conductor. When oxygen is present during the deposition, it reacts with the titanium and contaminates the process.

The Dycor CG1000-RTP Oxygen Analyzer improves your yield by detecting oxygen contamination at the parts-per-million level. And, it maximizes throughput by ending the purge cycle as soon as the oxygen background is at an acceptable level.

When you initiate a wafer processing cycle, you are assured the process environment meets expectations.



The CG1000-RTP from AMETEK was developed to meet the special requirements for use on RTP tools.

CG1000-RTP Oxygen Analyzer

SPECIFICATIONS

Operating Range: 0.1 PPM O₂ to 100% O₂

Accuracy: ± 2% of reading or 0.05% O₂ absolute (0.5 PPM O₂, absolute for PPM range), whichever is greater

Response Time: Less than 5 seconds at 150 SCCM over one decade

Repeatability: ± 0.5% of reading or 0.1% O₂ absolute (0.1 PPM O₂, absolute for PPM range), whichever is greater

Environment: Ambient Temperature: 5°C to 40°C (41°F to 104°F)

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

Maximum Inlet Temperature: 70°C (60°F)

Sample Flow: 50 to 200 SCCM (150 SCCM is recommended)

Sample Pressure: 600-810 Torr

Max Allowable Instrument Pressure: 900 Torr

System Compliance:

EMC Directive 89/336/EEC
Immunity Standard, EN50082-2,
Heavy Industrial

Emissions Standard, EN5011
Equipment Class: Industrial,
Scientific, and Medical

Safety Directive EN 61010

Power Requirements:

115/230 VAC ± 10%, 50/60 Hz

Power Dissipation: 80 VA

Calibration Gas Requirements:

Use calibration gases @ 50 to 200 SCCM (150 SCCM recommended)

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

Span Gas: One decade above zero gas (10 times greater) recommended

FEATURES

|| Each analyzer is leak-tested to a specified maximum leak rate of 3 x 10⁻⁸ atm cc/sec. helium, which ensures gas delivery system integrity.

|| Complete stainless steel sampling system.

|| Contact closure for high oxygen reading.

|| Serial communication for heater failure, sensor failure, high flow, low flow, oxygen alarm.

|| RS-232 output.

|| Mass flow sensor.

|| Inlet port connections are 1/8" Swagelok® compression fittings and outlet port connections are 1/4".

|| Sensor seal is made with chemically inert material.

|| Operating range of 0.1 PPM to 100% O₂

|| Zirconium oxide sensor for accuracy and fast response.

|| 4-line x 20-characters vacuum fluorescent display shows combinations of oxygen, time and date, cell temperature, user-programmable text, T/C mV, cell mV, or flow.

|| Password protection and context-sensitive help are standard. Display line 4 is reserved for full-text error and diagnostic messages.

|| Two isolated current outputs. Select oxygen, cell temperature, T/C mV or cell mV as current output. Each can be 4-20 mA, 0-20 mA, 20-4 mA, or 20-0 mA. Select hold or track during calibration.

|| Diagnostics include watchdog timer, service alarm, system tests, and a 20-entry event log.

|| Real-time clock/calendar.

|| Sample flow 50 to 200 ml/min. (106 to 425 cfh). 150 ml/min recommended (318 cfh).

AMETEK®
PROCESS INSTRUMENTS

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One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
Specifications subject to change without notice.

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Non-Combustion
THERMOX