CLEAN GAS PROCESS INSTRUMENTS

ANALYZER SOLUTIONS FOR *YOUR* PROCESS!

CG1100-RTP Oxygen Gas Analyzer

Improves yields by detecting ppm-level oxygen in Rapid Thermal Processes.

PRODUCT DESCRIPTION

The CG1100-RTP oxygen analyzer is one of a growing range of products offered by AMETEK for the semiconductor industry. Specifically developed for the industry's rapid thermal processing (RTP) wafer fabrication systems, the CG1100-RTP oxygen analyzer meets the special requirements for use on RTP tools and has been integrated by leading semiconductor tool manufacturers into their latest RTP and Mini-Batch systems.

The CG1100-RTP oxygen analyzer improves processing yields by detecting oxygen contamination at the parts-per-million level. By providing positive protection from the effects of oxygen contamination and by ending the purge cycle as soon as the oxygen background is at an acceptable level, maximum throughput can be realized.

CG1100-RTP Oxygen Analyzer

KEY FEATURES

- **Fast response over a Wide Operating Range**
  Your system will respond rapidly over an operating range of 0.1 ppm to 100% oxygen. The CG1100-RTP can be used to detect oxygen contamination and monitor the purge cycle.
- **Easy to Integrate into Tool Controller and Data Acquisition System**
  The CG1100-RTP is equipped with an RS-232 and two RS-485 ports. It comes with configurator software for initial setup of operating parameters and accepts user-provided software for efficient integration with the tool controller. Analog/digital outputs and I/O alarms available.
- **Electronic Flow Meter and VSO Proportional Solenoid Valve**
  Work together to automatically control flow, electronically maintaining sample flow rate while enabling use over a range of sample inlet/outlet pressures.
- **Zirconium Oxide Sensor**
  Your system will not fail to zero oxygen reading. It is always protected - something not possible with other sensor technologies.
- **Optional System 2000 Software Available**
  Provides enhanced interface and process monitoring with graphical user interface for Windows 95, 98/NT format.
- **Compact**
  8" x 8" x 8" cube houses all electronics, RS-232 port, (2) RS-485 ports, I/O port and analog output (4-to-20 mA) isolated.

AMETEK PROCESS INSTRUMENTS

150 Freeport Road, Pittsburgh, PA 15238 U.S.A. TEL: (412) 828-9040 FAX: (412) 826-0399 http://www.ametekpi.com

SPECIFICATIONS

Operating Range:
0.1 ppm O_2 to 100% O_2

Accuracy:
± 2% of reading or .05% O_2 absolute (0.5 ppm O_2 absolute for ppm range), whichever is greater.

Response Time:
Less than 5 seconds at 115 sccm over one decade.

Repeatability:
± 0.5% of reading or 0.1% O_2 absolute (0.1 ppm O_2 absolute for ppm range), whichever is greater.

Maximum Inlet Temperature:
160°F (70°C)

Environment:
For Indoor Use Only
Ambient temperature: 0°C to 40°C (32°F to 104°F).
IEC Installation Category II
IEC Pollution Degree 2
Maximum Altitude: 2000 meters
Relative Humidity: 10% to 90%, non-condensing

CG1100-RTP Rear View

Sample Flow Rate:
50 to 200 sccm according to user application requirements. The flow rate is factory calibrated at 100 sccm. An integral mass flow meter and proportional valve are used to automatically maintain a constant sample and calibration gas flow.

Maximum Inlet Pressure:
600 to 1034 Torr. Absolute maximum allowable inlet pressure is 1034 Torr (20 PSIA).

Maximum Inlet/Outlet Pressure:
This specification is dependent upon the flow at which you have set the analyzer to operate. A higher flow rate will result in faster response and requires a higher pressure differential between inlet and outlet pressure. A lower flow rate will result in a slower response and require a lower pressure differential. Range of pressure differential is 3 Torr @ 50 sccm to 15 Torr @ 200 sccm.

Calibration Gases:
Zero Gas:
From 0.1 ppm to 10% O_2, balance N_2.
Span Gas:
At least one decade above zero gas (10 times greater) recommended.

Isolation Valves:
Nupro, normally closed, air-actuated, diaphragm valves (SS BNV51-C) on inlet and exhaust ports. Female push-to-connect fitting accepts 1/8” OD plastic air line to supply 45 psi actuation pressure.

Port Connections:
1/8” Swagelok compression fittings on sample and calibration ports. 1/4” Swagelok compression fitting on exhaust port.

Sampling System:
Stainless steel components and tubing used in sample path.

Indicators:
LEDs for status of power, communications, and fault conditions.

Software:
Configurator software to configure and calibrate the analyzer. Runs on a PC with Windows 95, 98 or NT with an RS-232 serial port. Communicates with a single analyzer using either an RS-232 cable or multiple units over an RS-485 network.

Communications:
Optically isolated RS-232 (one DB-9F connector) and RS-485 (two DB-9F connectors). RS-232 selected if RTS signal is set. Multiple units can be networked on an RS-485 network. RS-485 node address is set via externally accessible selector switch. Baud rate is software-selectable to 9600 or 19200 baud. Uses CG1100-RTP-compatible protocol.

I/O:
DB-15F connector. Two software-configurable alarms for Oxygen, Flow and Pressure. Two additional outputs for System Fault and Watchdog alarms. Optically isolated analog output 4-20 mA (optionally 0-5 V) for oxygen, flow and pressure.

Power Requirements:
24VDC ±5%, 2.5A, less than 100 mv noise or ripple. An optional external 24V power supply is available with 100-250 VAC, 47-63 Hz input (AMETEK PN: 25446JE).

Enclosure:
8”H x 8”W x 8”D. Powder coat black finish. A clearance of at least 1/4” is required on sides and bottom of unit for air circulation.

CE Compliance:
EN61326 EMC Directive and EN61010-1 Low Voltage Directive.

UL Classified:
UL Classified and c-UL classified.

TQM CE UL LISTED c UL LISTED nsai I.S. EN ISO 9001