

## OZONE IN AMBIENT AIR

### OZ 2000G, SERES' CONTRIBUTION TO ENVIRONMENT QUALITY SURVEILLANCE,

- On line, continuous analysis,
- U.V. photometry,

### FOR OZONE CONTROL IN AIR.

#### OZ 2000G benefits :

- ✓ Easy operation
- ✓ Fast & reliable measurement
- ✓ Specific, long-life, ozone scrubber
- ✓ Limited maintenance

**OZ 2000G** is one of SERES' Series 2000G line of air analysers using the same modular electronics. This advanced design monitor incorporates the latest achievements in continuous measurement of Ozone.



Non contractual

## APPLICATIONS

### Ozone is :

- Naturally present in high atmosphere where it forms a **protective layer** that efficiently filters solar UV rays deemed responsible for skin cancer.
- Also occurring in lower atmospheric layers as a **pollutant** eventually inducing respiratory, renal or neurologic disorders.

### A variety of sources & applications :

- **Urban areas** : it results from the reaction of gas pollutants (ozone precursors) such as unburnt hydrocarbons and nitrogen oxides from vehicles exhaust gases combining with oxygen in air.
- **Industries & indoor areas** : some electrical appliances (printers, motors, ...) generate ozone in low quantities.
- Ozone is also currently used for the purification and treatment of **drinking and waste water**.

## ADVANTAGES

**Efficient & robust monitor**

**Measurement by U.V. photometry**

**User-friendly interface**

**Temperature & pressure compensation**

**Optimum response time,  
Stable signal & negligible drifts**

**Simple, easy-to-clean measuring cell**

**Compliance with EN 14625:2005  
US EPA approval**

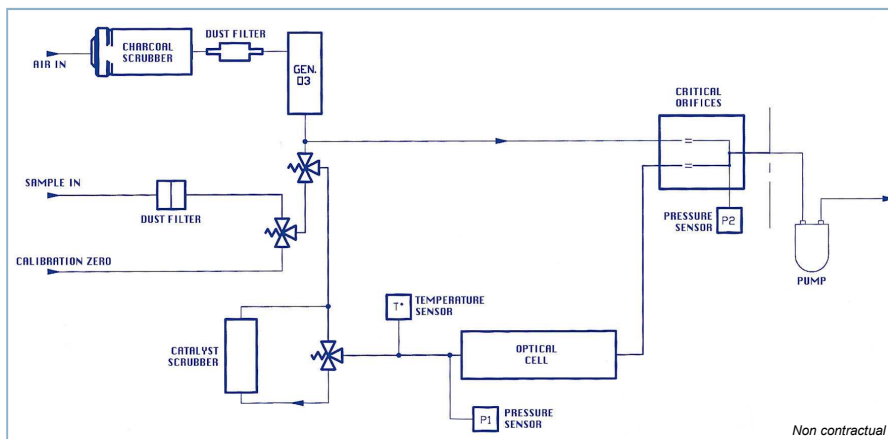
**Turnkey projects : rack system integration,  
data processing, ...**

## PRINCIPLE - U.V. PHOTOMETRY

The concentration of ozone is determined by the attenuation of **254 nm UV light** along a single path cell. **Ozone absorption** of UV light is proportional to ozone concentration in the atmosphere. Sample air is circulated in a measuring chamber swept by a **U.V. radiation**. A catalyst having the ability to destroy ozone is regularly added into the sample line to establish **reference** conditions. This catalyst scrubs only ozon. The **Beer-Lambert law** is then used to calculate the concentration of ozone. It is an **absolute measurement**, unbiased by interferents, dust, and source intensity since there are internal corrections for temperature & pressure.

✓ The method used here relies on Beer-Lambert law and therefore **does not require any calibration**.

✓ On option, an **internal zero-span system** provides a source of zero air and known concentration of ozone.



## TECHNICAL SPECIFICATIONS

### CONSTRUCTION & ENVIRONMENT

|                          |   |
|--------------------------|---|
| Dimensions               | Rack 19" - 4U :<br>480 x 180 x 540 mm (W x H x D)   |
| Weight                   | 18 kg   |
| Material                 | Steel epoxy paint   |
| Protection & Environment | Installation in safe area, protected from weather conditions, dust & corrosive atmosphere |
| Working T°               | 0 to 40°C (5 to 35°C recommended)   |
| Humidity                 | 0 to 96% non condensing   |

### POWER SUPPLY & CONSUMPTION

|              |                                    |
|--------------|------------------------------------|
| Power supply | 230 VAC - 50 Hz (other on request) |
| Consumption  | 100 VA                             |

### ANALYSIS

|                    |   |
|--------------------|---|
| Method & Parameter | U.V. photometry absorption<br>Ozone, O <sub>3</sub> |
| Range              | 100 - 500 - 1000 - 5000 - 10000 ppb                 |
| Unit               | ppb ou µg/Nm <sup>3</sup>                           |
| Min. detectable    | < 1 ppb   |
| Response time      | from 10 sec. to 2 min.                              |
| Linearity          | +/- 1.0% end of range                               |
| Zero drift         | < 1.5 ppb per week                                  |
| Span drift         | < 1 % per month                                     |
| Zero               | Automatic, internal                                 |
| Pressure           | Compensation from - 200 to 3000 m altitude          |

### SAMPLING & OPERATION

|                 |  |
|-----------------|--|
| Sampling        | External sampling pump                                       |
| Sample flow     | 60 l/h   |
| Ozone generator | Option : internal zero / span generator with zero air filter |
| Sample / Zero   | Solenoid valves for span / zero gas (manual or remote)       |
| Ozone scrubber  | Lifetime > 2 years   |

### COMMUNICATION & ALARMS

|                  |  |
|------------------|--|
| User interface   | Display 4 x 40 characters and keyboard (16 keys)   |
| Data storage     | Internal memory storage 1/4 hourly measurements over 20 days (others on request)                                     |
| Analog output    | 4 - 20 mA (others on request)  |
| Digital output   | RS 232C with transmission of status  |
| Dry contacts     | Fault, threshold, calibration ongoing  |
| Other interfaces | Modem output, Jbus/Modbus interface(option),<br>Serial interface for external printer<br>(printer option on request) |

### COMPLIANCE

|           |  |
|-----------|--|
| Standards | Compliance with EN14625:2005<br>US EPA Certification |
|-----------|--|

### ENGINEERING / TURNKEY PROJECTS (on request)

Rack cabinet integration - Teletransmission interface - Data acquisition system  
Flameproof adaptator pr sampling in ATEX area - Heated line  
Other options on request