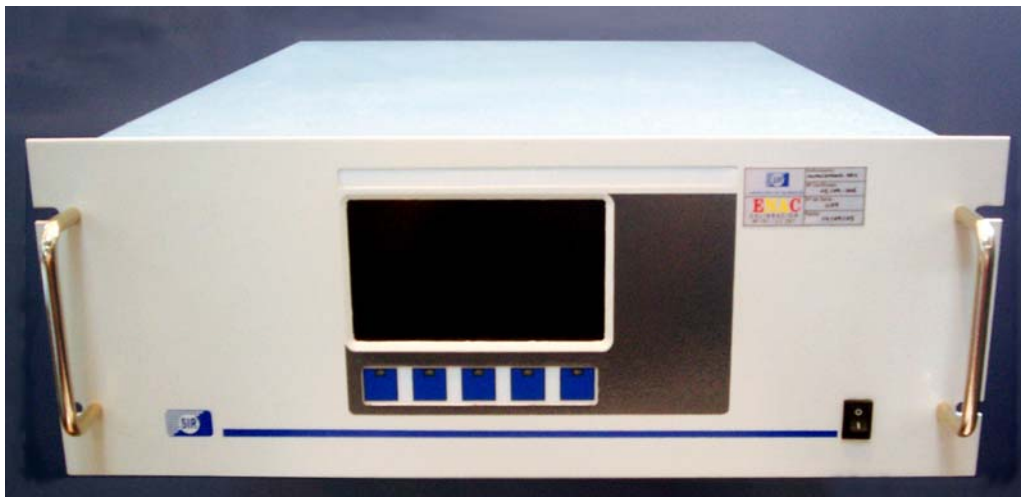


MODEL S-5014

UV Absorption O₃ Analyzer



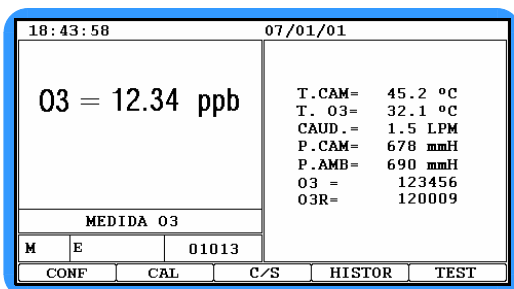
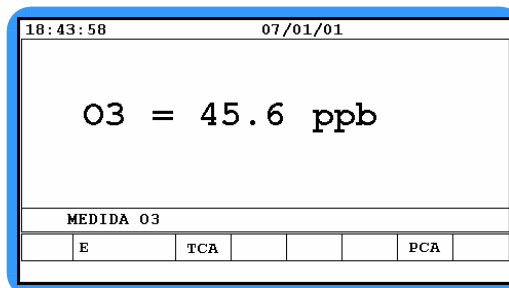
Advantages – Features

- ◆ **UV Lamp** extended life.
- ◆ **Automatic** Temperature and Pressure Correction
- ◆ **Concentrations** in ppb, µg/m³, ppm.
- ◆ **Autorange** or operator adjustable.
- ◆ **Modular Electronics** common with SIR Models:
-S-5001 SO₂. -S-5006 CO.
-S-5012 NO_x. -S-5000 Multi-Gas Calibrator.
- ◆ **Automatic** zero correction.
- ◆ **External Sensors** can be logged, data can be stored and presented in graphical and tabulated formats.
- ◆ **Electronic Diagnostic Transducers.**
- ◆ **Internal Datalogger** and Memory.
- ◆ **Graphical Screen** with simultaneous presentation of Concentrations and Diagnostics.
- ◆ **Bi-directional** Communication for External Control, “RS232/RS485”.
- ◆ **Calibration:** manual, automatic and remote.
- ◆ **Dedicated Menus and Graphical Screen** allowing total external control:
 - Configuration
 - Calibrations
 - Graphics
 - Zero/Span
 - Diagnostics
 - Data History
 - Alarm History
 - Test of elements
- ◆ **Powerfull Calibration and Maintenance** Menus (protected by password).
- ◆ **Calibration** not only for the pollutants but also for internal electronics of functional parameters.
- ◆ **Multi-tasking software** allows viewing test variables while operating.
- ◆ **Adaptive filtering** selectable.
- ◆ **Continuous self checking** with warning alarms and table of alarms history.
- ◆ **Signals Generation** for checking Data Acquisition Channels.
- ◆ **Options:**
 - PCMCIA Board.
 - Internal O₃ generator.

SERVICE CAPABILITIES AND EXTERNAL CONTROL

MAIN SCREEN.-

- Simultaneous display of:
 - Date and Time.
 - Concentrations and Units.
 - Internal valves status.
 - Activated digital inputs.
 - Up to six alarm conditions.
 - Current measurement phase.
 - Backlight, automatic activation.



DIAGNOSTICS SCREEN.-

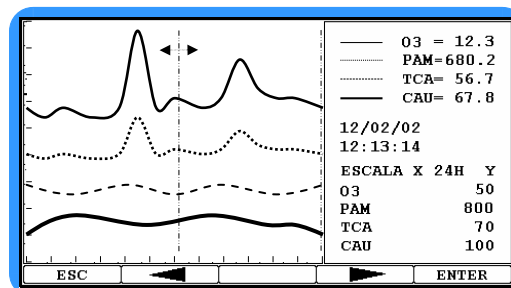
- Powerful diagnostic software, determination of possible faults.
- The anomalous parameter is shown with an arrow.
- Continuous Quality Control.

SERVICE AND CALIBRATION.-

- Authorization through a password.

GRAPHICS SCREEN.-

- Simultaneous Graphics of up to four parameters.
- Selectable integration periods 5, 10, 15, 30, 60 min.
- Selection cursor, date, time, value, measuring ranges.



EXTERNAL SENSORS

- It is possible to connect external sensors.
- The Datalogger and Memory are configurable.

TABLA DE HISTORICOS				
HHMMSS	DDMMAA	PAR	VALOR	F
> 121314	120202	O3	12.3	T
121814	120202	PAM	680.2	T
122314	120202	TCA	56.7	T
122814	120202	CAU	67.8	T
123314	120202			

ESC BORRA

DATA HISTORY.-

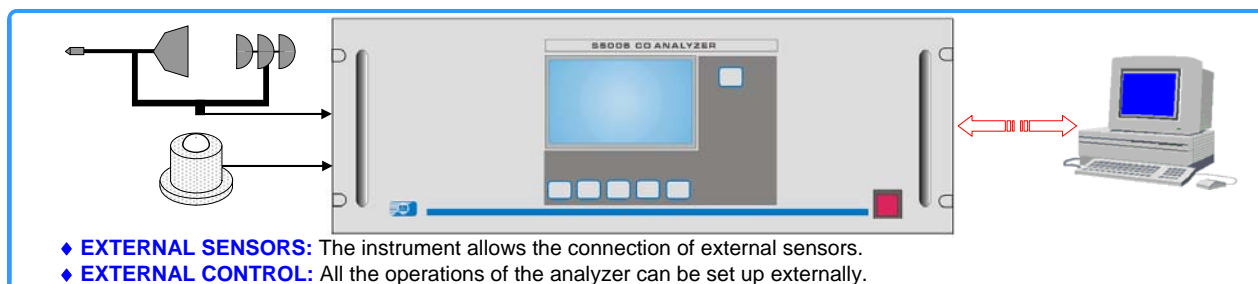
- Automatic generation of tables for the selected parameters: data, diagnostics, external sensors.
- Selectable integration periods: 5, 10, 15, 30, 60 min.
- Cursor for quick reference to date.
- Indication of:
 - Parameter.
 - Date.
 - Value.
 - Time.
 - Operative conditions (flag).

ALARMS TABLE.-

- Automatic generation of alarms of selectable parameters: data, diagnostics, external sensors.

TABLA DE ALARMAS					
NR	DGT	E	VALOR	HHMMSS	DDMMAA
> 3	TCA	F	67.8	121314	120202
2	TCA	B	53.2	120100	120202
1	TCA	F	65.2	111213	120202

ESC BORRA



THEORY OF OPERATION

SIR Model S-5014 ozone analyser is a self-contained instrument which measures the concentration of ozone in a sample of ambient (background) gas, such as air, oxygen, nitrogen, etc.

This instrument is a monochromatic, U.V. absorption spectrophotometer specific to ozone. The analyser measures ozone concentration directly by the attenuation of U.V. radiation by ozone molecules in the optics cell. The ozone concentration is obtained by measuring the relative intensity of transmitted U.V. radiation for a "measurement pair" consisting of a consecutive zero and sample gas cycle.

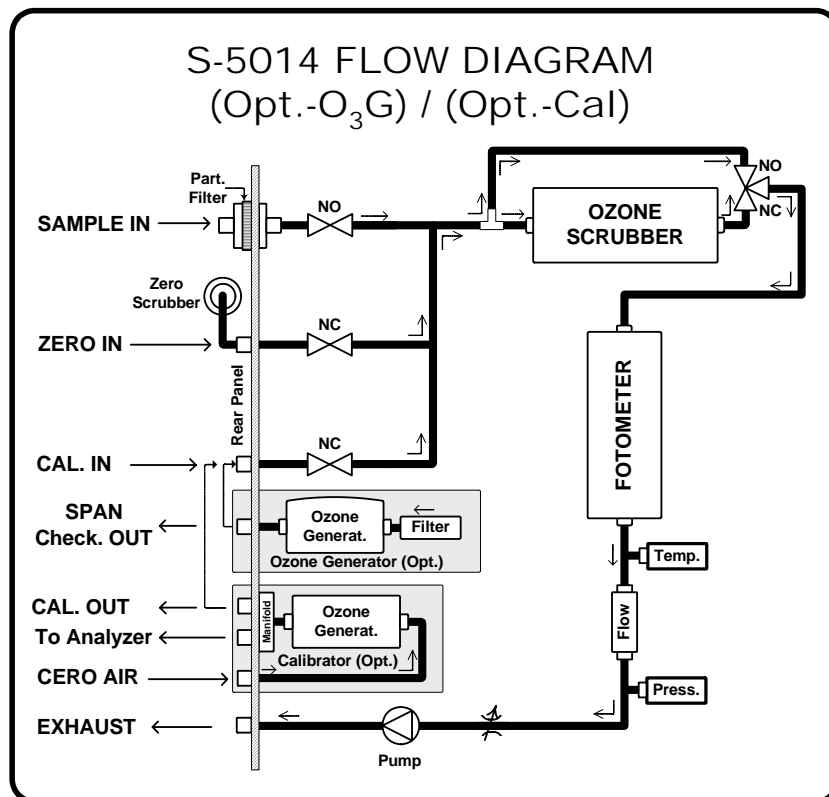
A fixed quantity of "zero gas" and the same quantity of "sample gas" are alternately drawn into the instrument's optics cell by utilizing a pump and sample handling system. The zero (reference) gas is ambient gas, with the ozone "scrubbed" (removed) by a catalytic converter; the sample gas is unaltered ambient gas with the ozone still present.

Alternate, consecutive measurements of the absorption of U.V. radiation during the reference cycle and the measurement cycle are made by the photometer. Continuous auto-zeroing and removal of

interferences are accomplished by this paired measurement technique, which may be thought of as "gas chopping". This technique achieves the same zero stability, with the added advantage of inherently eliminating all the interferences and a non-existing zero drift.

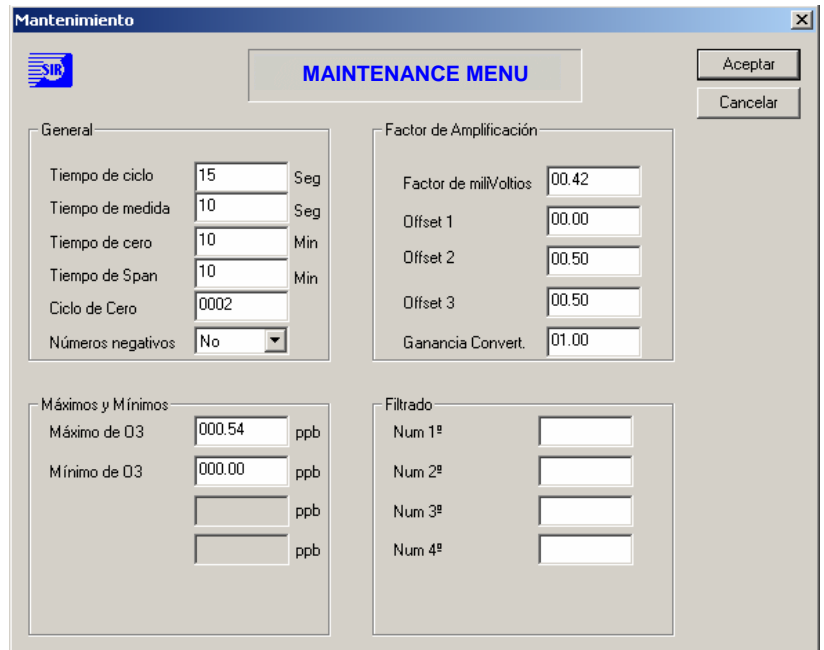
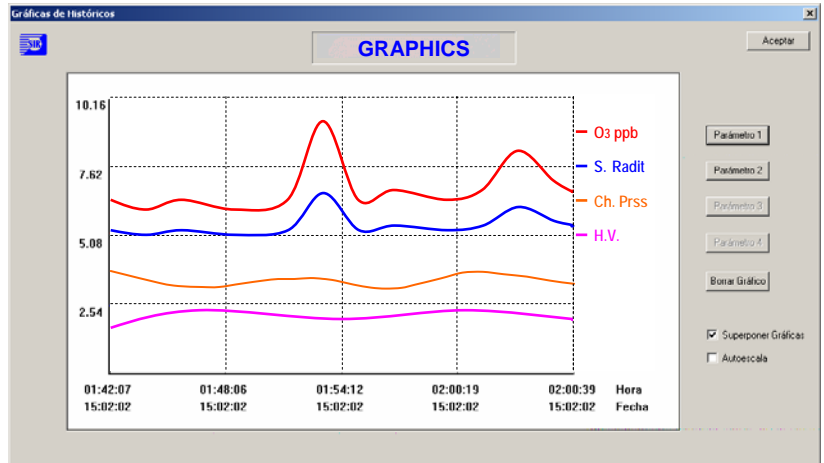
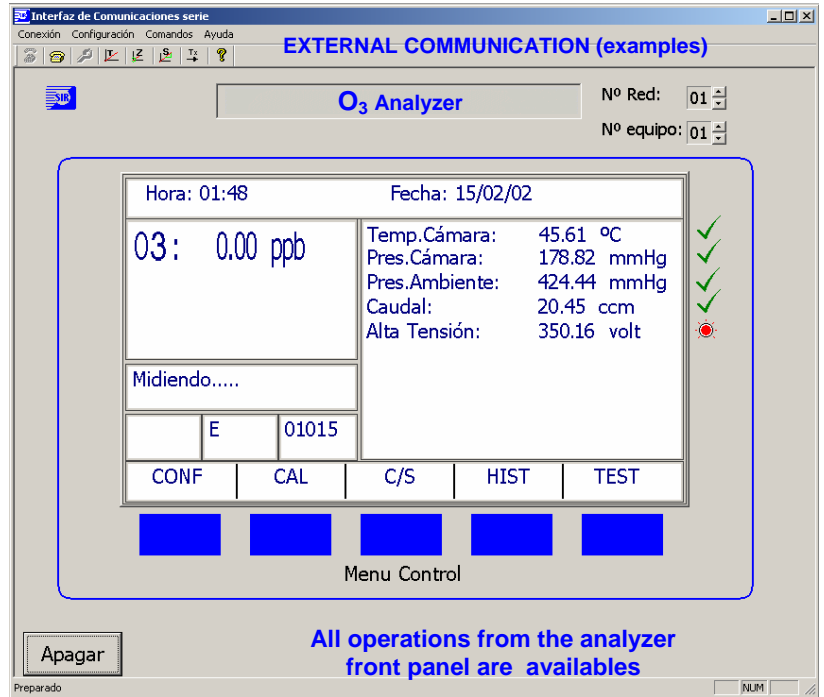
Span stability is achieved by ensuring that the reference and measurement cycle times for each measurement pair are identical. A special "clock/counter" control circuit (much like a stopwatch) is utilized. This circuit is first set by the reference cycle time interval, and then controls the subsequent measurement cycle time interval. It is then reset for the measurement pair.

Appropriate signal processing of each individual measurement pair by the electronic system yields the instantaneous ozone concentration (within the selected update cycle time of the instrument) in accordance with the Beer-Lambert law. It also makes the control and synchronization of sequences, automatically makes the corrections for temperature and pressure. The internal parameters of the instrument are continuously watched by the electronic system, which also sets up the communications protocol for data transmission.



SPECIFICATIONS

- Ranges:** 0-50, 500, 1000 ppb
Other available.
- Autorange / Adjustable Range.**
- Units:** ppb, $\mu\text{g}/\text{m}^3$, ppm
($\mu\text{g}/\text{m}^3$, referred to 0°C, 20°C, 25°C).
- Noise:** < 0.5 ppb.
- Lower Detectable Limit:** 0.6 ppb.
- Zero Drift:** 0 (digital output).
< 0.5 ppb/month.
- Span Drift:** 0 (digital output).
< 0.5 ppb/month.
- Lag Time:** 15 Seconds.
- Rise Time:** 30 Sec. (90% FS).
- Fall Time:** 30 Sec. (90% FS).
- Precision:** < 1 ppb.
- Linearity:** < $\pm 1\%$.
- Temperature Range:** 5-40°C.
- Sample F. Rate:** 1.5 lpm.
- Analog Outputs:** 4 (Volts-mAmp).
(Adjustables).
- Analog Inputs:** 2 (external sensors).
- Digital Inputs/Outputs:** 5 Status, RS232 or RS485.
- Automatic:** Temperature and Pressure correction.
- Automatic:** Zero correction.
- Internal:** Datalogger and Memory.
- External Control and Download:** RS232 or RS485.
- Common Electronics with:** SIR Analyzers/Calibrator.
- Power:** 115/220 VAC or 12VDC.
- Included Items:** Particulate filter.
Zero and Span Valves.
- Dimensions and Weight:**
- | | <u>Bench Mount</u> | <u>Rack Mount</u> |
|--|--------------------|-------------------|
| | 17.8 cm (7") | 17.8 cm (7") |
| | 43.5 cm (17") | 48 cm (19") |
| | 59 cm (23") | 59 cm (23") |
| | 16 Kg (36 lbs) | 16 Kg (36 lbs) |
- OPTIONS:** PCMCIA Card.
Internal O3 generator.
Calibration (U.V. photometer subsystem)



CE APPROVED
ACCORDING TO UNE 77221-2000
AND CE DIRECTIVE 1999/30/CE
US/EPA APPROVAL EQSA-0207-164
COMPLIES WITH EN 14625:2005