

9500/8500 Nitrosave Oxygen Control System



The Nitrosave control system combined with a state of the art trace and percent oxygen measurement technology offers cost of ownership with pay back times in Nitrogen savings within a few years.



ULTRA TEC KOREA



Soldering ovens



UV Curing Systems



Food Packaging machines

Features & Benefits

- Save on nitrogen usage and rework costs.
- Improve process control and product quality.
- Automatically detects a halt in production and reduces nitrogen flow for even greater savings.
- Extremely fast response time even after high oxygen excursions means quicker process optimization.
- Nitrosave Viewer PC software makes set up quick and easy.
- USB and RS485 communications output for data logging can document the whole process.
- Small footprint allows OEM manufacturers to install inside their machines.

Conforms to European Directives:

Electromagnetic Compatibility Directive 89/336/EEC Low Voltage Directive 73/23/EEC

Save Nitrogen and Improve Process Control

Nitrosave

Nitrosave consists of the oxygen monitor/control unit and a proportional or other control valve which is fitted into the nitrogen supply line to the machine.

Nitrosave monitors the residual oxygen in the system under control using our latest cell technology. The oxygen measurement is then used together with a fuzzy logic control algorithm and user-defined setpoints for desired oxygen level, to automatically control the opening of the valve, which regulates the flow of nitrogen into the machine.

This ensures enough nitrogen to comfortably maintain the desired oxygen level is fed into the machine but eliminates the waste seen with fixed-flow nitrogen systems.

Installation of the Nitrosave is very simple and it can be retrofitted to almost all types of machines.

Once in place, setting up the control system is straight forward and can be done when the machine is in production. It is always possible to revert to manual control and the system will automatically select maximum flow in the event of a fault.

Nitrogen is used in soldering and other controlled atmosphere machines to remove oxygen which results in better production quality, however, nitrogen can be expensive.

Systech Illinois' long expertise in the field of gas analysis led to the development (in partnership with major soldering machine manufacturers) of the Nitrosave, designed to reduce the nitrogen consumption of your machine.

This technology is easily transferred to other inerted machines. Whether you have a small wave machine or large reflow system, the savings with Nitrosave are considerable. With nitrogen reductions of 25-70%, the payback time for the system is very short, with the added benefits of improvements in process control and full traceability.



Control Valves

Various sizes, types, flow rates and connections to suit every machine. Allows control of main nitrogen flow or specific zones in the machine.

Outputs & Alarm

For data logging, chart recorders and remote monitoring

- USB and RS485
- 4-20mA / 0-20mA
- 2 high / low alarms
- Fault alarm

Doping Systems

Mass Flow controlled, or other, doping for control at high oxygen levels (500ppm+). Ideal when soldering BGA components.

Operator Interface

- User-friendly menu
- Setpoints & alarm settings
- Control configuration
- Read-only mode

Nitrosave Viewer

Datalogging is simple with the provided Nitrosave Viewer program. This allows a log of a number of machine parameters (including oxygen level and valve opening) to be made. The data is stored as a text file which can be easily manipulated and displayed graphically using spreadsheet programs.

Photoswitch PCB Detector

Automatically detects a halt in production and reduces nitrogen flow for even greater savings.

Principle of Operation

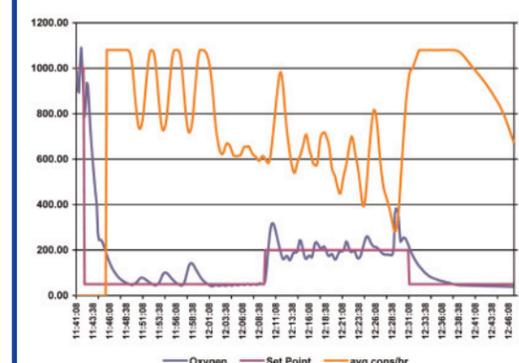
The Nitrosave uses Systech Illinois' patented RACE sensor*. A unique electrochemical cell which responds in seconds even to large changes in oxygen levels and is unaffected by solvent vapors or hydrocarbons making it ideal for use in systems where high oxygen events are common.

Development of the RACE™ cell allows oxygen measurements to be made across the full range normally found in a soldering oven, without delays due to the purging of the measurement system or sample lines. The high speed of the cell ensures a very rapid start up response and accurate monitoring of changes in the machine atmosphere during production.

The RACE™ sensor is maintenance free and only requires infrequent calibration. RACE™ sensors carry a 3 year limited guarantee.

* USA Patent no. 5929318
UK Patent no. 2324870

Nitrosave Viewer



9500/8500 - Nitrosave Oxygen Control System



Bench/Panel Mount
7.48H x 9.33W x 16.14D(inches)
18.51lbs



IP66/NEMA 4X
Wall Mount/Weatherproof
18.11H x 14.96W x 6.3D(inches)
34.17 lbs



Rack Mount 4U - 19 inch
Houses 1 or 2 Analyzers
7H x 19.05W x 16.14D (inches)
21.38 lbs (single unit)

Technical Specifications

| | |
|-----------------------------|---|
| Sensor Type | Dependent on Application |
| Ranges | 0.01ppm - 100% O ₂ Autoranging |
| Accuracy | Dependent on measurement method |
| Measuring Cell Type | Electrochemical or Zirconia solid state, dependent on application. |
| Communications | USB and RS485 |
| Alarms | 2 programmable changeover contacts, rated 240V 3A 1 fault alarm, changeover contact, rated 240V 3A |
| Analog Outputs | 2 scaleable 4-20mA or 0-20mA all isolated. 1 for control valve. |
| Operating Conditions | |
| Sample Connections | 1/8 inch O/D compression |
| Ambient Temperature | 23° to 122°F (-5 to 50°C) |
| Sample Gas Flow Rate | 100 -300 ml/min (internal pump) |
| Power | 230/110 VAC selectable, 80VA |
| Options | |
| Product Sensor | Detects halt in production, software can engage new set points. |
| Valve Options | Flow rates dependent on oven. Consult the factory for more information. |
| MFC Doping Option | Air injection systems. |

Systech Illinois have over 25 years experience of providing analysis solutions for a wide range of industries. From our manufacturing plants in the U.S and UK we produce gas analyzers for industrial process industries, headspace analyzers for monitoring gas flushing of food products, and our range of permeation analyzers.

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