



ATMOSCOPE™

Nitrogen Supply System

NS500



Users Guide

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WARNING

Read the Safety and Applications Information Section in the Operation and Maintenance Manual thoroughly before installing and using your ATMOSCOPE™ Nitrogen Supply System.

Introduction

This manual will provide the user with the basic information to properly operate and maintain the EDSYN NS1000 & NS500 ATMOSCOPE™ Nitrogen Supply Systems.

WARNING

Failure to comply with the Application and Maintenance Guidelines, Filter Replacement Schedules, Monitoring Recommendations and Safety Guidelines contained herein and in other relevant product safety literature provided with the substances and equipment could result in risk of serious injury, fire or explosion

If you encounter any difficulty operating your systems, or have any questions, call your local authorized EDSYN Distributor or contact EDSYN Applications Engineering directly at:

Tel: (818) 989-2324 • Service Fax: (818) 997-0460

The EDSYN ATMOSCOPE™ Nitrogen Supply System represent the latest technology in affordable Nitrogen Generation. These systems allow the production of nitrogen-enriched air for use in soldering applications.

ENVIRONMENTAL SPECIFICATIONS

Ambient Operating Temp: 0°C to 50°C

Storage Temperature: -40°C to 125°C

Ambient Operating Humidity: 90% relative humidity max. non-condensing

Storage Humidity: 90% relative humidity max. non-condensing

EDSYN, Inc. retains the right to make changes to specifications contained herein at any time, without notice. Contact your local authorized EDSYN Distributor or EDSYN, Inc. to obtain the latest specifications.

Additional copies of this manual or other EDSYN literature may be obtained by contacting us at:

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Tel: (818) 989-2324 • Sales Fax: (818) 997-0895 • Service Fax: (818) 997-0460

Web Site: www.edsyn.com • Email: info@edsyn.com

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GENERAL INFORMATION

NS1000 & NS500 ATMOSCOPE™ Nitrogen Supply System Specifications

Model Number	NS1000	NS500
Max N2 Flow Rate	*69 L/min	*13 L/min
# of soldering irons @ 99% N ²	*12	*2
Max Input Air pressure	8.5 bar 123 psi	8.5 bar 123 psi
Power source	No Electrical power required	
Outline Dimensions	720 x 270 x 300 mm 28.3" x 10.6" x 11.8"	420 x 180 x 220 mm 16.5" x 7.0" x 8.66"
Weight	18 kg / 39.69 lbs	8.5 kg / 18.75 lbs

*These figures are based on 99 % nitrogen
enriched airflow at 7 bar/101.5 psi, temp 25 °C

PERFORMANCE (based on new membrane performance)

MODEL	% OF NITROGEN	FLOW RATE OF OUTPUT L/MIN
NS1000	99.9	8.8
	99	24.1
	98	37
	97	47
	96	58
	95	69
NS500	99.9	2
	99	5
	98	7
	97	9
	96	11
	95	13

Figures based on dry, clean air pressure of 7 bar/101.5 psi, temp 25 °C

SAFETY & APPLICATIONS INFORMATION

EDSYN ATMOSCOPE™ Nitrogen Supply Systems are designed to utilize the latest polyimide hollow fiber membrane technology to allow the generation of nitrogen from compressed air. The input compressed air pressure must not exceed 8.5 bar/123 psi, it is important to ensure all compressed air hoses and fittings are maintained and in good working order.

DISCLAIMER

EDSYN, Inc. hereby disclaims all responsibility for any personal injury, property damage, fine, citation or penalty imposed by any government or private entity which results from any use, misuse or mis-application of this product, failure of the user to regularly maintain the product according to the recommended guidelines, or failure to adequately monitor input and/or output air and the ambient workplace environment for the presence of harmful levels of gases, fumes and particulates.

Compliance with all applicable environmental and personnel safety regulations is the sole responsibility of the user and adequate self-monitoring of exhaust gases released into the atmosphere or the workplace as well as monitoring of the ambient workplace air is strongly recommended.

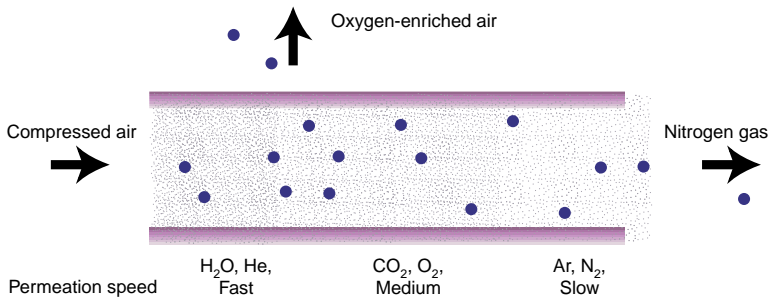
WARNING

Failure to comply with the Application and Maintenance Guidelines, Filter Replacement Schedules, Monitoring Recommendations and Safety Guidelines contained herein and in other relevant product safety literature provided with the substances and equipment could result in risk of serious injury, fire or explosion

To insure continued effective performance, the following guidelines must be followed.

SAFETY & APPLICATIONS INFORMATION

The basic principle of these products are that as compressed air flows through the hollow fibers contained within the membrane body, oxygen is selectively allowed to permeate through the fibre wall to atmosphere. This results in a nitrogen rich gas being obtained at the output of the hollow fibre membrane.



There are three main factors determining the removal of oxygen from the nitrogen rich air.

- Temperature** - if this is maintained at close to 25°C then it can be ruled out of further calculations of oxygen.
- Flow rate** - increasing the flow rate through the unit increases the level of oxygen present in the output.
- Pressure** - increasing the pressure reduces the level of oxygen present in the output.

FEATURES

- The NS1000 and NS500 are able to achieve Nitrogen purities of up to 99.9% on demand as stand alone units.
- Extremely quick set-up times, because the system can be connected into an existing compressed airline it can be positioned in minutes and is very portable.
- Low running costs: the NS1000 and NS500 require no power source other than compressed air.
- Using conventional bottled nitrogen can result in a nitrogen imbalance in the workplace. This system recycles oxygen maintaining the correct balance of oxygen and nitrogen in the workplace.

The unit contains no moving parts so does not give rise to noise or dust.

APPLICATIONS / INSTALLATION

The NS1000 and NS500 are designed to be used close to the process workbench. The following are recommended guidelines for setting up your EDSYN ATMOSCOPE™ Nitrogen Supply Systems. If you have any specific questions that this section does not cover, please consult your EDSYN Representative or call EDSYN, Inc. directly.

1. PLACEMENT

There are two major considerations that need to be addressed for proper placement of the ATMOSCOPE™ Nitrogen Supply System:

- 1) **Unit Location:** The ATMOSCOPE™ Nitrogen Supply System unit should be located so that it will not block aiseways or impede normal operating traffic or material handling pathways. It is important to position the unit in such a way that allows for proper clearance to remove the access cover and replace the filters as needed.
- 2) **Proximity to the work area:** The ATMOSCOPE™ Nitrogen Supply System should be placed as close to the work area as possible.

INSTALLATION SET UP

Connection and Operation

The unit is connected to a compressed airline max pressure 8.5 bar/123 psi. Ensure that the compressor is switched off while installing.

Compressed Air Supply Details:

Supply pressures should be regulated to the nitrogen supply system at a lower value than the compressors hysteresis to ensure constant operating pressure. The air supply should have no chemical, lubricant or particulate matter added to the airline. It is however acceptable to use both dry and lubricated compressors. Connection to the airline is made via ¼ BSP female fitting on the NS1000 and 1/8 BSP on the NS500.

Output of nitrogen rich air is also via the same size fittings.

***EDSYN recommends that you add internally to the system, a membrane dryer to be in line with incoming compressed air supply, (see optional items list in manual).**

INSTALLATION SET UP CONTINUED

Startup

1. Ensure the system pressure regulator is closed
2. Close off the flow regulator
3. Turn-on the compressed air to the unit
4. Open the system pressure regulator until gauge reads a nominal 7 bar/101.5 psi
5. Open flow rate regulator until desired rate is achieved
6. Run for 20-60 mins to allow system to stabilize before use.

Shut Down

1. Close compressed air feed to unit
2. Leave open flow regulator
3. When nitrogen has stopped flowing from outlet, close system regulator flow regulator

Once running the level of nitrogen can be controlled by both the flow rate regulator and the pressure regulator.

Maintenance

The units require no maintenance other than the replacement of the internal compressed air filters on a once yearly basis, or sooner depending on the quality of the input compressed air. The filters are essential to maintain the integrity of the membrane. The membrane will also need to be replaced from time to time, this will depend on quality of the input compressed air, product usage and purity of nitrogen required (approx membrane life based on average use 18-24 months).

Air Filter Replacement procedure:

1. Remove screws from rear panel
2. Locate 3 stage filter module on left hand side of case
3. Unscrew each poly carbonate bowl in an counter-clockwise direction and remove
4. Remove filter element by undoing locking screw from underside
5. Replace new element by following notes 1-4 in reverse.

INSTALLATION SET UP CONTINUED

Membrane Replacement procedure

1. **ENSURE UNIT IS DISCONNECTED FROM AIR SUPPLY!**
2. Remove screws from rear panel
3. Locate 2 x nitrogen separator modules on right hand side
4. Remove retaining brackets to free nitrogen separators
5. Disconnect pipes from both nitrogen separators at top and bottom. This is done by pushing in surrounding flange of fitting and pulling out pipe.
6. Remove nitrogen separators from case
7. Fit new separators by following points 2-6 in reverse. Ensure that when fitting pipes into connectors they are securely located.

MAINTENANCE & REPLACEMENT PARTS

NS 1000 Replacement Parts List

Description	Part Number	Note
Nitrogen Separator	SR832	
Membrane Dryer	SR834	Optional for Areas of high humidity
Gauge	SR836	
1 Stage filter	SR837	
Element for SR837	SR838	
2 stage filter	SR839	
Element for SR839	SR840	
3 Stage filter	SR841	
Element for SR841	SR842	
Pressure Regulator	SR843	
N2 Flow Regulator	SR845	
Carbon Bed Filter	SR846	Optional for very low odor applications
Bracket for SR846	SR847	
Element for SR846	SR848	

NS 500 Replacements Parts List

Description	Part Number	Note
Nitrogen Separator	SR831	
Membrane Dryer	SR833	Optional for Areas of high humidity
Gauge	SR835	
1 Stage filter	SR837	
Element for SR837	SR838	
2 stage filter	SR839	
Element for SR839	SR840	
3 Stage filter	SR841	
Element for SR841	SR842	
Pressure Regulator	SR849	
N2 Flow Regulator	SR844	
Carbon Bed Filter	SR846	Optional for very low odor applications
Bracket for SR846	SR847	
Element for SR846	SR848	

LIMITED WARRANTY

EDSYN warrants to the first user that this equipment will be free of defects in materials and workmanship for a period of one (1) year from the date of receipt by such user.

This warranty does not cover repair or replacement required as a result of misuse, mishandling or improper storage. Failure to perform recommended routine maintenance, alterations or repairs made other than in accordance with EDSYN's directions, or removal or alteration of identification plates in any way will void this warranty. This warranty is available only to the first user, but the exclusions and limitations herein apply to all persons and entities. This warranty does not apply to consumable items such as filters, elements & hoses.

EDSYN MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

EDSYN will, at its option, repair or replace any defective equipment or parts at its facility or other location approved by it at no charge to user, or provide parts without charge for installation by the user in the field at user's expense and risk. User will be responsible for all costs of shipping equipment to EDSYN or other location for warranty service.

EXCEPT FOR THE REMEDY ABOVE DESCRIBED, UNLESS OTHERWISE REQUIRED BY APPLICABLE LAW, EDSYN WILL HAVE NO OTHER OBLIGATION WITH REGARD TO ANY BREACH OF WARRANTY OR OTHER CLAIM WITH RESPECT TO THE EQUIPMENT OR LIABILITY FOR ANY DIRECT, INDIRECT CONSEQUENTIAL, OR INCIDENTAL LOSS OR DAMAGE CAUSED BY OR OCCURRING IN CONNECTION WITH ANY OF THE EQUIPMENT.

To obtain Warranty Service, contact your local authorized EDSYN Distributor or you may also contact EDSYN, Inc. at:

15958 Arminta St. • Van Nuys, CA 91406 USA
Tel: (818) 989-2324 • Service Fax: (818) 997-0895

Do not return defective parts or equipment to EDSYN or your local authorized distributor without obtaining prior authorization.

Any warranty or other claim with respect to the equipment must be made in writing delivered to EDSYN (or your local authorized EDSYN Distributor outside the US) within a reasonable time of the expiration date of this warranty with sufficient evidence of purchase and date of receipt, otherwise user's rights under this warranty shall be deemed waived.

WARRANTY REGISTRATION CARD

To register your purchase with EDSYN, Inc., please fill in the form below and mail or FAX to EDSYN, Inc.

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EDSYN Model and #: _____

Serial #: _____

Date Purchased: _____

Purchased From: _____

Address: _____

City: _____ **State:** _____

Zip: _____ **Country:** _____

Tel.#: _____ **Fax#:** _____

Internet Address: _____

Name: _____

Authorized Signature, Title



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