

# Specification manual

## high purity (99.999%) DS-PSA<sup>®</sup>

### Laboratory Nitrogen Generators

## Models

**N2-SIROCCO-3000**

**N2-SIROCCO-5000**



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**NOTICE:** This manual is intended to provide technical specifications of the LNI SCHMIDLIN AG range of Nitrogen Generator SIROCCO Series. If you have any further questions, please contact:

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## ***INTRODUCTION***

### **Product Description**

**LNI SCHMIDLIN AG** high purity nitrogen gas generators (DS-PSA technique) eliminate the need for costly, inconvenient high pressure cylinders in the laboratory. Including integral oil-free air compressors as standard, the generators deliver a continuous stream of 99.999%+ pure nitrogen gas with a minimal residual Oxygen content without the need for secondary purification.

The **LNI SCHMIDLIN AG** SIROCCO series of Nitrogen Gas Generators is ideal for operation as nitrogen gas supply for all kind of Laboratory and Chromatography applications.

### **Technical**

**LNI SCHMIDLIN AG** nitrogen gas generators use a patented DUAL STEP pressure swing adsorption (DS-PSA) system. Pressure swing adsorption is well known and the DUAL STEP system is new innovation from LNI Schmidlin AG, much more economical and much more efficient way as the traditional standard PSA technique.

The DS-PSA system remove oxygen, carbon dioxide and water from compressed air. The resulting stream of high purity nitrogen gas (99,999%) is ideal for Laboratory applications including GC carrier gas, make-up gas, and many other applications like ICP etc.

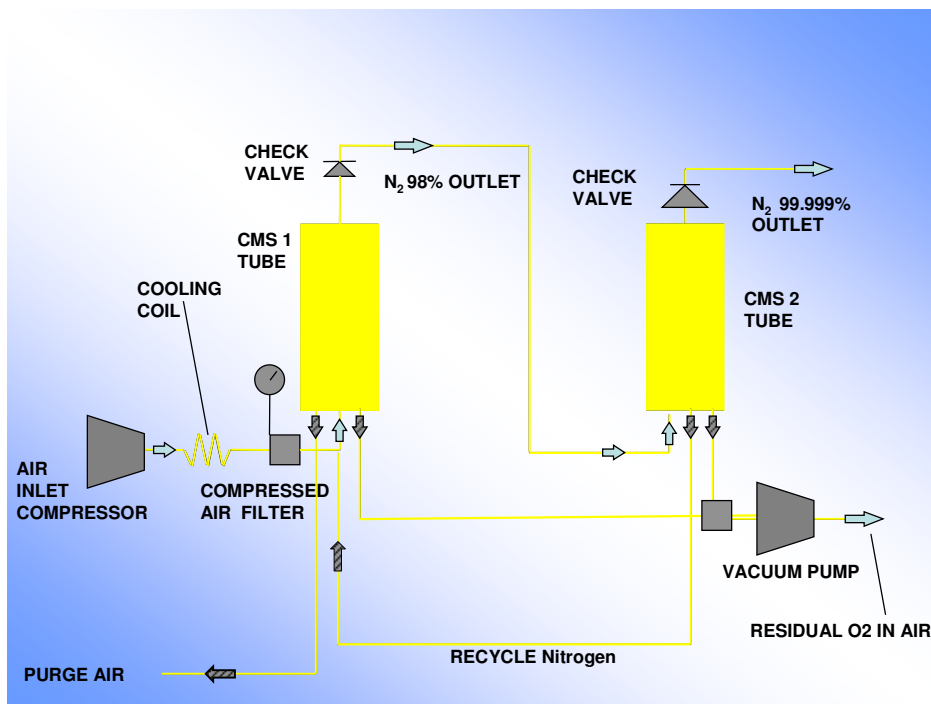
All **LNI SCHMIDLIN AG** gas generators are designed and manufactured within a rigorous ISO9001 quality system.

## DUAL STEP PRESSURE SWING ADSORPTION DS-PSA:

The production of nitrogen is divided into two steps: in the first step, the compressed air is forced to pass through a carbon molecular sieve to produce nitrogen at a purity of approx 98%; in the second step this nitrogen is forced to pass into a second carbon molecular sieve and reaches a final purity up to 99.999%+. The purge gas from the second step is recycled and partially used as feed gas in the first step. In addition, the purge process is supported by active evacuation for better performance in the next cycle.

Therefore, the ratio between inlet compressed air and nitrogen production is ONLY 8:1, ( instead of 12:1 for the traditional PSA system used by all competitors nitrogen generators), so the life time of all the components is much higher and the system works more economical.

## *the DS-PSA technique* patent pending



**Specifications of the nitrogen generators SIROCCO series**

|                       |   |
|-----------------------|---|
| Type of production    | <b>DS-PSA (DUAL-STEP pressure swing adsorption)</b> |
| N <sub>2</sub> purity | <b>99.999%+ (Oxygen content less the 10 ppm)</b>    |

|   |  |                      |
|---|--|----------------------|
| Nitrogen flow rate                                    | Model N2-Sirocco-3                             | 0-3000 cc/min at STP |
| STP: Standard temperature and pressure (20 °C, 1 bar) | Model N2-Sirocco-5                             | 0-5000 cc/min at STP |
| Outlet pressure                                       | 5 bar (73 psi)                                 |                      |
| Purity  | 99.999%+ (O <sub>2</sub> < 10 ppm)             |                      |
| Weight  | 110 kg   | Transport 145kg      |
| Power consumption                                     | 820 W  |                      |
| Input voltage   | 110 V/ 60 Hz or 230V / 50 Hz                   |                      |
| Fuse  | 10 A   |                      |
| Pressure accuracy                                     | 0.1 bar (± 0.5 %)                              |                      |
| Microprocessor controlled display                     | Graphic display, 128 x 64 pixels               |                      |
| Index of protection                                   | IP2x   |                      |
| Operating conditions:                                 |  |                      |
| - Temperature   | 10 °C to +40 °C                                |                      |
| - Relative humidity                                   | 0-80%, non condens 0-99% with condens drain    |                      |
| Over voltage category                                 | II   |                      |
| Pollution degree                                      | 2  |                      |
| Sound pressure level                                  | < 60 dB(A)                                     |                      |
| Case dimensions                                       | 482 x 835 x 641 mm (WxDxH) Fit under the bench |                      |

## ***FEATURES***

- **Improved safety**

Nitrogen produced at low pressure and ambient temperature removes the need for high pressure cylinders or liquid dewars

- **Increased laboratory efficiency**

A constant, uninterrupted gas supply of guaranteed purity eliminates interruptions of analyses to change cylinders and reduces the amount of instrument re-calibrations required

- **Improved economy**

Up to 99.999%+ pure nitrogen gas produced as standard. No need for costly downstream secondary filtration

- **Security of supply**

Integral oil-free air compressor guarantees continuous gas supply, independent of in-house compressed air supply

- **Simple installation**

The gas generators can be installed in the laboratory

## ***MAINTENANCE***

- **Service Kit**

Every 4000 h of operation, the filters and silencer need to be changed. This operation can be performed quite simply by the user, and is described in detail in the user manual.

Every 24000 h of operation, we recommend to service the unit from trained service personal. Pls contact your area representative or LNI Schmidlin AG at [www.schmidlin-dbs.com](http://www.schmidlin-dbs.com).

An in-built clock informs the user of the current operating hours, and a read light on the front panel indicates when the 4000 h threshold has been reached.