

Atlas Copco

Membrane Nitrogen Generators

NGM Series (flow 37-14,832 scfh; purity 95% - 99.5%)



Atlas Copco's innovative Membrane Nitrogen Generator uses membrane air separation to produce nitrogen. The membrane consists of a bundle of hollow fibers with a polymeric structure. The membrane allows nitrogen to pass and other gases (such as oxygen, water vapor and CO₂) to permeate. Compressed air enters at the inlet of the generator, and nitrogen exits at the outlet. Membrane technology generates nitrogen with a purity between 95 and 99.5% and flows up to 15,000 scfh.

Features and Benefits

Ready to Use

- Requires only a supply of dry compressed air
- No specialist installation or commissioning
- Fitted with pre-filtration, pressure gauges and O₂ analyzer. PDP sensor and flow meter are optional

Cost Savings

- Low operating expenses
- No additional costs such as order processing, refills and delivery charges
- Limited maintenance costs

Exceptional Convenience

- Continuous availability (24 hours a day, 7 days a week)
- Risk of production breakdown due to gas running out is eliminated

Desired Purity

- Nitrogen supply according to your need: from 5% to 0.5% oxygen content
- Very easy to set up the device for any purity levels

Optimum Flexibility

- Modular design for adaptation to your exact application needs
- Very compact design including dust, oil and vapor filtration

High Flow Capacity

- Ideal for applications such as fire prevention, tire inflation, oil & gas, marine, packaging and many more

Convenient monitoring

- Elektronikon graphic controller displays all operating information on color screen
- Communication is possible to MODBUS, PROFIBUS, Ethernet customer systems
- Ethernet visualization is a standard feature as well as remote alarm monitoring

Technical Specifications

| NGM | Capacity (scfh) | | | | | |
|-----|-----------------|------|------|------|------|-------|
| | Purity | | | | | |
| | 95% | 96% | 97% | 98% | 99% | 99.5% |
| 1 | 403 | 325 | 254 | 184 | 117 | 85 |
| 2 | 805 | 650 | 509 | 367 | 233 | 170 |
| 3 | 1413 | 1165 | 918 | 671 | 388 | 247 |
| 4 | 2825 | 2331 | 1836 | 1342 | 777 | 494 |
| 5 | 4238 | 3496 | 2755 | 2013 | 1165 | 742 |
| 6 | 5650 | 4662 | 3673 | 2684 | 1554 | 989 |
| 7 | 7063 | 5827 | 4591 | 3355 | 1942 | 1236 |

Reference conditions:

| | |
|------------------------------|------------|
| Ambient temperature | 68°F |
| Ambient pressure | 14.7 psig |
| Unit inlet temperature | 68°F |
| Membrane working pressure | 101.5 psig |
| Compressed air inlet quality | 95% |

Outputs (Min/Max)

| | |
|--|------------|
| Maximum compressed air inlet temperature | 122°F |
| Maximum ambient temperature | 122°F |
| Minimum compressed air inlet temperature | 41°F |
| Minimum ambient temperature | 32°F |
| Minimum compressed air inlet pressure | 58 psig |
| Maximum compressed air inlet pressure | 188.5 psig |
| Minimum nitrogen purity | 90% |
| Maximum nitrogen purity | 99.5% |

Correction Factors for Nitrogen Capacity

| Membrane pressure (psig) | 58 | 72.5 | 87 | 101.5 | 116 | 130.5 | 145 | 159.5 | 174 | 188.5 |
|--------------------------|------|------|------|-------|-----|-------|-----|-------|-----|-------|
| Correction factor | 0.44 | 0.65 | 0.85 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.1 |

| Inlet temperature (°F) | Purity (% N2) | | | | | |
|------------------------|---------------|-----|-----|-----|-----|------|
| | 95 | 96 | 97 | 98 | 99 | 99.5 |
| 41 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 50 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 68 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 86 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 104 | 1.1 | 1.1 | 1.0 | 1.0 | 0.8 | 0.6 |
| 122 | 1.2 | 1.1 | 1.1 | 1.0 | 0.8 | 0.6 |



Sizing example

NGM 4 at following conditions: 95%, 145 psig, 104°F
 Corrected capacity $2825 \text{ scfh} * 1.6 * 1.1 = 5593.5 \text{ scfh}$

