HiFluxx ST15020-1

Nitrogen Membrane Module

Product Information Sheet

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost-effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

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Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow-fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing, pre-delivery**
  No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Performance data is based on 20°C feed-air temperature and 1013 mbar ambient pressure

Nitrogen purity %[1]	Nominal nitrogen flow rate in m³/hr[2]				
	99	98	97	96	95
4 bar g	24.0	39.0	53.0	71.0	89.0
5 bar g	35.0	58.0	78.0	105	131
6 bar g	46.0	75.0	103	137	171
7 bar g	54.0	89.0	121	161	201
8 bar g	59.0	97.0	133	177	221

Nitrogen purity %	Feed-air consumption at nominal nitrogen flow rate in m³/hr[2]				
	99	98	97	96	95
4 bar g	161	175	191	220	239
5 bar g	238	259	283	324	353
6 bar g	289	324	359	411	445
7 bar g	340	381	423	483	523
8 bar g	374	419	465	531	576

Maximum pressure drop <0.3 bar.

1. Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO2 (0.03 %), and some trace inert gases. Therefore it should be born in mind that the value that is normally called the nitrogen content actually is the inert gas content.
2. m³/hr refers to conditions at 1013mbar(a) and 20°C

Above tables reflect nominal flow rates. The nitrogen output of each individual module can vary +/- 15%. For selection purposes, calculation should be done based on nominal conditions without taking the variation into account. When ordering modules, it is necessary that the total modules needed for each individual project are clearly mentioned per order-line on the order-intake-form. Parker will assure that the total output flow rate (sum of the individual selected membranes flow rates) will be minimum the total nominal flow rate. The compressor selection can be done on the total calculated nominal flow rate without taking any variation into account.

Example:
Your project requires 1515 Nm³/hr nitrogen at 8 bar g inlet pressure, 95% purity and 20°C inlet temperature. You will need 7 modules. Parker will ensure a minimum total product flow of 1515 Nm³/hr. However, individual module performance can still vary +/-15%. The compressor should be selected on a total air consumption of 7 x 576 = 4032 Nm³/hr.

Ambient Conditions

Ambient temperature	+2°C to +50°C
Ambient pressure	atmospheric
Air quality	clean air without contaminants

Feed-air Conditions

Maximum operating pressure	9.0 bar g
Min. / Max. operating temperature	+2°C / +50°C
Maximum oil vapour content	<0.01 mg/m³
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Flow Rate Corrections

Nitrogen flow rate at feed temperatures other than 20°C	Use bulletin S3.1.059*
Feed-air consumption at feed-air temperatures other than 20°C	Use bulletin S3.1.059*

*version number may vary, make sure to use the most recent version

Mechanical Design Housing

Design pressure	14 bar g
Design temperature	65°C

membrane operating limits are lower

Material

Housing	Aluminum

Services on Request

3D model CAD STEP file

Weight, Dimensions and Connections

Dimensions H x Ø D	1740 x 280 mm
Weight	46 kg
Connection inlet / outlet	G 2½" female
Vent	100 mm OD
Dimensional drawing	K3.1.339*

Note
Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com**

Parker has a continuous policy of product development and although the company reserves the right to changes specifcations, it attemps to keep customers informed of any alterations.

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