SmartFluxx SA1508

Nitrogen membrane module

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 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.

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
- **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

Purity %	Typical[1] Nitrogen flow rate in m³/hr[2] (SCFM)					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	2.8 (1.6)	4.0 (2.4)	5.7 (3.4)	7.1 (4.2)	9.5 (5.6)	10.9 (6.4)
5 bar g (72.5 psi g)	3.7 (2.2)	5.3 (3.1)	7.9 (4.6)	10.2 (6)	12.8 (7.5)	15.2 (8.9)
6 bar g (87 psi g)	4.7 (2.8)	7.0 (4.1)	10.2 (6)	13.0 (7.7)	15.7 (9.2)	20.5 (12.1)
7 bar g (101.5 psi g)	6.1 (3.6)	8.5 (5)	12.3 (7.2)	16.5 (9.7)	19.5 (11.5)	24.3 (14.3)
8 bar g (116 psi g)	6.9 (4.1)	9.7 (5.7)	14.3 (8.4)	19.2 (11.3)	23.3 (13.7)	28.1 (16.5)
9 bar g (130.5 psi g)	7.8 (4.6)	11.1 (6.5)	17.0 (10)	21.2 (12.4)	27.0 (15.9)	32.2 (19)
10 bar g (145 psi g)	8.6 (5.1)	12.6 (7.4)	18.5 (10.9)	23.3 (13.7)	30.2 (17.8)	37.4 (22)
11 bar g (159.5 psi g)	9.6 (5.7)	14.2 (8.4)	20.7 (12.2)	25.4 (14.9)	33.0 (19.4)	41.0 (24.1)
12 bar g (174 psi g)	10.5 (6.2)	15.2 (8.9)	22.9 (13.5)	28.5 (16.7)	36.6 (21.5)	45.6 (26.8)
13 bar g (188.5 psi g)	11.3 (6.7)	16.3 (9.6)	24.9 (14.7)	31.6 (18.5)	39.5 (23.2)	48.8 (28.7)

Purity %	Typical Feed-air consumption at nitrogen flow rate in m³/hr[2] (SCFM)					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	21 (12)	21 (12)	22 (13)	22 (13)	26 (15)	27 (16)
5 bar g (72.5 psi g)	24 (14)	26 (15)	29 (17)	31 (18)	34 (20)	36 (21)
6 bar g (87 psi g)	29 (17)	33 (19)	36 (21)	38 (22)	41 (24)	48 (28)
7 bar g (101.5 psi g)	36 (21)	38 (22)	41 (24)	48 (28)	50 (29)	56 (33)
8 bar g (116 psi g)	38 (22)	42 (25)	47 (28)	56 (33)	58 (34)	63 (37)
9 bar g (130.5 psi g)	44 (26)	48 (28)	55 (32)	62 (36)	67 (39)	72 (42)
10 bar g (145 psi g)	50 (29)	56 (33)	61 (36)	68 (40)	75 (44)	84 (49)
11 bar g (159.5 psi g)	51 (30)	60 (35)	66 (39)	74 (44)	80 (47)	91 (54)
12 bar g (174 psi g)	57 (34)	65 (38)	76 (45)	83 (49)	92 (54)	103 (61)
13 bar g (188.5 psi)	66 (39)	72 (42)	85 (50)	92 (54)	101 (59)	113 (67)

Maximum pressure drop at Purity <0.2 bar
Values between brackets are indicative of imperial values

[1] The above data represents the typical performance of a single membrane module. Actual performance can vary depending on factors such as feed air pressure and temperature. Please contact your Parker go to person for actual performance information to meet your application's requirements.
[2] m^3/hr refers to conditions at 1013 mbar(a) and 20°C

For purities >99.5% please contact Parker

Ambient Conditions

Ambient temperature	+2°C to +50°C (+36°F to 122°F)
Ambient pressure	atmospheric
Air quality	clean air without contaminants

Operating Conditions Feed-air

Maximum operating pressure	13.0 bar g (190 psi g)
Min. / Max. operating temperature	+2°C / +50°C (+36°F to 122°F)
Maximum oil vapour content	<0.01 mg/m^3 (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Flow Rate Corrections

Nitrogen flow rate at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]
Feed-air consumption at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]

[3] Revision number may vary, make sure to use the most recent revision

Mechanical Design Housing

Design pressure	15 bar g[4] (217 psi g) [4]
Design temperature	65°C[4] (149°F) [4]

[4] Membrane ambient and operating conditions are lower

Material

Housing	Aluminum
Coating	ESPC to RAL 7039 (Quartz Grey) Dry Film Thickness: 60 micron

Weight, Dimensions and Connections

Dimensions H x Ø D	1655 x 114 mm (65.12" x 4.49")
Weight	6.8 kg (15 lb)
Connection feed-air	G¾" female to ISO 228
Connection nitrogen enriched air	G¾" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	G1" female to ISO 228
Dimensional drawing	Refer to K3.1.330

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.

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

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