

SMARTFLUXX SA15015

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 CO2 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

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Performance data

Typical¹⁾ Nitrogen flow rate in m³/hr²⁾
(SCFM)

Purity %	99	98	97	96	95
4 bar g (58 psi g)	21.8 (12.8)	29.6 (17.4)	37.4 (22.0)	48.4 (28.5)	59.5 (35.0)
5 bar g (73 psi g)	29.5 (17.3)	42.5 (25.0)	55.5 (32.7)	69.4 (40.8)	83.2 (49.0)
6 bar g (87 psi g)	36.8 (21.7)	54.6 (32.1)	72.3 (42.6)	89.1 (52.5)	105.9 (62.4)
7 bar g (102 psi g)	43.9 (25.8)	65.8 (38.8)	87.8 (51.7)	107.8 (63.4)	127.7 (75.2)
8 bar g (116 psi g)	50.7 (29.8)	76.3 (44.9)	102.0 (60.0)	125.3 (73.7)	148.6 (87.5)
9 bar g (130 psi g)	57.2 (33.6)	86.0 (50.6)	114.8 (67.6)	141.6 (83.4)	168.5 (99.2)
10 bar g (145 psi g)	63.3 (37.3)	94.8 (55.8)	126.4 (74.4)	156.9 (92.3)	187.4 (110.3)
11 bar g (160 psi g)	69.2 (40.7)	102.9 (60.6)	136.6 (80.4)	171.0 (100.6)	205.4 (120.9)
12 bar g (174 psi g)	74.8 (44.0)	110.1 (64.8)	145.5 (85.6)	183.9 (108.3)	222.4 (130.9)
13 bar g (189 psi g)	80.1 (47.1)	116.6 (68.6)	153.1 (90.1)	195.8 (115.2)	238.5 (140.3)

Typical Feed-air consumption at nitrogen flow rate in m³/hr²⁾
(SCFM)

Purity %	99	98	97	96	95
4 bar g (58 psi g)	116 (68)	116 (69)	120 (71)	141 (83)	155 (91)
5 bar g (73 psi g)	152 (90)	164 (96)	176 (104)	198 (116)	211 (124)
6 bar g (87 psi g)	186 (109)	206 (121)	226 (133)	249 (147)	262 (154)
7 bar g (102 psi g)	216 (127)	244 (143)	270 (159)	296 (174)	299 (176)
8 bar g (116 psi g)	244 (144)	278 (163)	309 (182)	338 (199)	347 (204)
9 bar g (130 psi g)	271 (159)	308 (181)	342 (201)	376 (221)	392 (231)
10 bar g (145 psi g)	298 (175)	334 (197)	371 (218)	410 (241)	431 (254)
11 bar g (160 psi g)	325 (191)	360 (212)	396 (233)	445 (262)	472 (278)
12 bar g (174 psi g)	352 (207)	386 (227)	422 (248)	478 (281)	511 (301)
13 bar g (189 psi g)	376 (222)	408 (240)	444 (261)	509 (300)	548 (323)

Maximum pressure drop at Purity: ≤ 0.2 bar Values between brackets are indicative imperial values

¹⁾ The above data represents the typical performance of a single membrane module. Actual performance can vary in the range of $\pm 13\%$ and is dependent on temperature see Flow Rate Correction below.

²⁾ m³/hr refers to conditions at 1013 mbar(a) and 20°C

³⁾ Performance certificates only available at standard test condition and never above 11 barg.

Ambient Conditions

Ambient temperature	+2°C to +60°C (+36°F to 140°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 / +60°C (+36°F to 140°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 g4 (217 psi g) ⁴⁾
Design temperature	65°C4 (149°F) ⁴⁾

⁴⁾ Membrane operating limits are lower

Material

Housing	Aluminum
Coating	Sulfuric Acid Anodizing [MIL-A-8625F, Type II]

Services Available on Request

Material certificates EN10204-2.2 on request	
3D model CAD STEP file	

Weight, Dimensions and Connections

Dimensions H x Ø D	1750 x 256/198 mm (68.9" x 10.1/7.8")
Weight	22.2 kg (48.9 lb)
Connection feed-air	G1½" female to ISO 228
Connection nitrogen enriched air	G1½" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	Dual Hose Connection 1½"
Dimensional drawing	Refer to K3.1.415