

## Technical data of Nitrogen Generation Membrane Module

### Model : MN2-00211

#### 1. Product : Hollow fiber membrane type module

#### 2. Use : Nitrogen generation

#### 3. Dimensions and Weight

Length	Dimension	Weight
589 mm	55 mm	1.5 kg

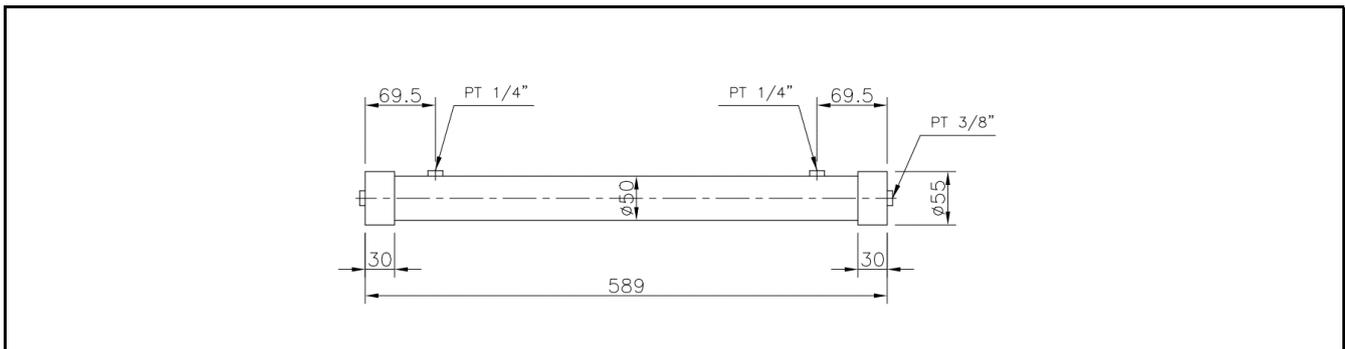
#### 4. Fittings

Air inlet	N2 product outlet	O2 enriched air outlet
Rc3/8" (PT)	Rc3/8" (PT)	Rc1/4" (PT)

#### 5. Components

Cap / Casing	Hollow fiber	Potting materials	Sealing O-Ring
Aluminium	Polysulfone	Epoxy	NBR

#### 6. Module Configuration



#### 7. Operating Conditions

Item	Unit	Condition
Operation Pressure	barg	Max. 13
Temperature(Min/Max)	°C	5 / 55
Relative humidity	%	Less than 60 (at Operating pressure and temperature, Remove moisture with air drier)
Particles	mg/m <sup>3</sup> (0 °C, 101.3 kPa)	Less than 0.1 (Remove particles with 3µm gas filter and 0.01µm mist separator)
Residual oil		Less than 0.01 (Remove oil with 3µm gas filter and 0.01µm mist separator)
Hydrocarbons		Less than 0.01 (Remove hydrocarbons with activated carbon if necessary)

## 8. Performance

Operating Temperature : 25°C

Pressure	MN2-00211	Nitrogen product flow rate and Air feed required ( Nm <sup>3</sup> /hr )					
	Oxygen density (%)	0.5	1.0	2.0	3.0	4.0	5.0
5 barg	Nitrogen	0.087	0.122	0.178	0.235	0.296	0.356
	Air	0.486	0.535	0.599	0.664	0.741	0.818
7 barg	Nitrogen	0.151	0.211	0.308	0.405	0.506	0.608
	Air	0.761	0.826	0.948	1.069	1.170	1.272
9 barg	Nitrogen	0.211	0.300	0.437	0.575	0.717	0.859
	Air	0.948	1.069	1.296	1.418	1.571	1.725
11 barg	Nitrogen	0.279	0.389	0.567	0.745	0.927	1.110
	Air	1.247	1.361	1.620	1.806	1.993	2.211
13 barg	Nitrogen	0.343	0.478	0.697	0.915	1.138	1.361
	Air	1.523	1.652	1.944	2.187	2.434	2.685

Operating Temperature : 35°C

Pressure	MN2-00211	Nitrogen product flow rate and Air feed required ( Nm <sup>3</sup> /hr )					
	Oxygen density (%)	0.5	1.0	2.0	3.0	4.0	5.0
5 barg	Nitrogen	0.093	0.129	0.189	0.249	0.313	0.378
	Air	0.535	0.588	0.659	0.731	0.815	0.900
7 barg	Nitrogen	0.161	0.223	0.326	0.429	0.537	0.644
	Air	0.838	0.909	1.042	1.176	1.287	1.399
9 barg	Nitrogen	0.223	0.318	0.464	0.610	0.760	0.910
	Air	1.042	1.176	1.426	1.559	1.729	1.898
11 barg	Nitrogen	0.296	0.412	0.601	0.790	0.983	1.176
	Air	1.372	1.497	1.782	1.987	2.192	2.432
13 barg	Nitrogen	0.364	0.507	0.738	0.970	1.206	1.442
	Air	1.675	1.818	2.138	2.406	2.677	2.954

Operating Temperature : 45°C

Pressure	MN2-00211	Nitrogen product flow rate and Air feed required ( Nm <sup>3</sup> /hr )					
	Oxygen density (%)	0.5	1.0	2.0	3.0	4.0	5.0
5 barg	Nitrogen	0.105	0.146	0.214	0.282	0.355	0.428
	Air	0.622	0.684	0.767	0.850	0.949	1.047
7 barg	Nitrogen	0.182	0.253	0.369	0.486	0.608	0.729
	Air	0.975	1.058	1.213	1.369	1.498	1.628
9 barg	Nitrogen	0.253	0.360	0.525	0.690	0.860	1.030
	Air	1.213	1.369	1.659	1.814	2.011	2.208
11 barg	Nitrogen	0.335	0.467	0.680	0.894	1.113	1.332
	Air	1.597	1.742	2.074	2.312	2.551	2.830
13 barg	Nitrogen	0.412	0.573	0.836	1.098	1.366	1.633
	Air	1.949	2.115	2.488	2.799	3.116	3.437

Operating Temperature : 55°C

Pressure	MN2-00211	Nitrogen product flow rate and Air feed required ( Nm3/hr )					
	Oxygen density (%)	0.5	1.0	2.0	3.0	4.0	5.0
5 barg	Nitrogen	0.113	0.156	0.229	0.300	0.380	0.459
	Air	0.684	0.752	0.843	0.934	1.043	1.151
7 barg	Nitrogen	0.195	0.271	0.396	0.521	0.651	0.782
	Air	1.071	1.162	1.333	1.504	1.646	1.789
9 barg	Nitrogen	0.271	0.386	0.563	0.740	0.922	1.105
	Air	1.333	1.504	1.823	1.994	2.210	2.427
11 barg	Nitrogen	0.360	0.500	0.730	0.959	1.193	1.428
	Air	1.798	1.924	2.280	2.523	2.775	3.104
13 barg	Nitrogen	0.442	0.615	0.896	1.178	1.464	1.751
	Air	2.209	2.365	2.716	3.099	3.405	3.725