Food Grade

ON-DEMAND
NITROGEN

TN2 Series: Nitrogen Generators for the Food Processing Industry

Engineered Solutions Provide Cost-Effective, On-Demand Nitrogen Production

Proven Technology:

PRISM® Nitrogen Membrane technology from AIR PRODUCTS AND CHEMICALS, INC. is at the core of every TN2 model.

Since being developed over 20 years ago, PRISM® membranes by Air Products and Chemicals, Inc. have continued to evolve and improve, making them the unquestioned leader in state-of-the-art hollow fiber technology. Fully adjustable up to 99.9% purity, they meet even the most demanding applications. Because the PRISM® membranes have no moving parts, this technology provides the most maintenance-free method of on-site nitrogen production available.

The TN2 Series of Nitrogen Generators from Titus Nitrogen provides you with the lowest cost of ownership through engineered solutions that precisely match your nitrogen needs. We analyze your specific situation and provide a solution based on your flow, purity and budget parameters.

Based on your nitrogen generation needs and internal capabilities, we

can provide solutions ranging from field-assembled, component-only packages to fully-assembled, custom engineered units and complete, compressor-nitrogen generator systems. This gives our customers total flexibility in meeting their nitrogen generation needs. The TN2 Series includes:

TN2 Basic

For those with the appropriate internal mechanical capabilities, we offer the option of a package made up of a dual filter system and membrane module shipped separately for field installation. Simply connect them and incorporate them into your system as desired. TN2 Basic provides you with the most cost-effective method of generating nitrogen.

TN2 Basic is also available as a complete, pre-assembled system on a wall-mount bracket or within a fully enclosed cabinet. Consult factory for these and other available options.

TN2 Essentials

The TN2 Essentials package includes membrane module(s) with filters, and a purity control system shipped separately for increased economy. All components can be configured by the user to match site requirements. Ideal for installations where access is restricted, space is limited, or for applications where a hazardous or explosive environment may exist.

The purity control system included with the Essentials model ensures delivery of proper purity at all times and eliminates the possibility of overflow condition.

The Essentials package can be customized by ordering the components pre-assembled on a wall-mount bracket, within a rugged sheet-metal cabinet or installed on a readily portable heavy-duty cart.

Proven Performance = Bottom Line Savings

The TN2 advantages:

- *Produces N2 only as needed*
- *Adjustable purity up to 99.9%*
- *Eliminates bottle/dewar handling*
- *Simple, reliable operation*
- *Few moving parts*
- *Little to wear out or replace*
- *Proven technology*
- *Reduced operating costs*

Is it Time for On-Site Nitrogen Generation?

If you are using more than a few nitrogen cylinders or dewars a month, you should consider on-site nitrogen production. Having a reliable source of nitrogen at all times could mean a significant reduction in operating costs, a savings of storage space and an improvement in employee safety by not having to transport and handle cylinders. Another consideration is not having to worry about delivery snags interrupting production schedules. In many instances, the lack of nitrogen from a late delivery can shut down an entire line, costing thousands in lost production.

Food Processing Industry Nitrogen Applications:

Nitrogen is widely used in food operations to extend shelf-life, minimize spoilage, prevent bacteria growth, and eliminate moisture. Uses include:

- Blanketing
- Bottling
- Modified Air Packaging (MAP)
- Wine Bottling and Processing
- Beer Dispensing
- Inert Conditions of Plant Storage Facilitity

The TN2 Series is Designed to Meet a Broad Range of Food Industry Needs

The TN2 Series revolutionizes on-site nitrogen production by breaking the mold on one-size-fits-all solutions. Recognizing that the need for nitrogen production encompasses a variety of applications within the food processing industry, TN2 is engineered for flow rates from 0.5 to 5000

TN2T2300C40E0

Skid Mounted TN2 GenPak

SCFH and is designed for easy operation and low maintenance. TN2 is especially suited for the challenges present in food grade environments. Talk to us about your specific needs. We have solutions available to meet your nitrogen requirements in a cost-effective and efficient manner.

TN2 Total

The most common nitrogen production solution includes filtration, temperature, pressure and purity control packages along with membrane module(s) in a space-saving wall or floor mounted enclosure, allowing convenient access to serviceable components. Compressed air hook-up, electric service, vent gas, and nitrogen gas outlet are connection points provided. Field expandable units are available for most models.

A variety of options are available including:

- Premium Electrical Package (PEP) that includes a PLC-Driven control system equipped with oxygen, pressure and temperature monitoring. Package also includes Auto Delivery system which automatically provides nitrogen to downstream processes when desired purity is reached
- Auto Bypass which ties into the PEP and allows for automatic switchover to a back-up source of nitrogen based on high oxygen or low pressure alarms
- Nitrogen Flow Meter that can be included as a stand-alone feature (or tied into the PEP) for remote monitoring and alarm should an out-of-tolerance condition occur
- Hydrocarbon Removal System that removes oil vapor to provide odor and taste-free supply for lab, medical and food processing & packaging requirements
- Dry nitrogen storage tanks to meet short-term, high demand events

TN2 GenPak

For applications where a reliable source of compressed air is not available, Titus' GenPak is the ideal solution. The package includes a high quality air compressor, wet air receiver and nitrogen generator that provides a precisely matched supply of high quality nitrogen to downstream processes.

The TN2 GenPak can be provided in one of three main configurations:

1) Separate elements for field assembly and installation

2) Skid mounted in a pre-wired, pre-assembled turn-key configuration

3) Constructed in a heated, ventilated, weather-proof unit for outdoor locations

All TN2 Total options are available for the TN2 GenPak.

If there is an option that is desired and not discussed here, consult the factory for a complete run-down of available options and configurations.

TN2 Series Nitrogen Generator
Specifications & Flow Rates

TN2 Basic/Essentials Series

Specifications (5)											
TN2B/TN2E Series (1)	Atmospheric Dew Point	Operating Pressure (2)		Inlet Air Temperature		Maximum Inlet Air Dew Point	Electrical Requirements		Connections		Dimensions (Inches) H X W X D (3)	Shipping Weight (4) (lbs.)
		Min	Max	Min	Max		Power	Kw	In	Out		
TN2 0800	To -90°F Typical	60 PSIG	150 PSIG	60°F	130°F	60°F	Not Applicable		3/8" NPT	1/4" NPT	32 X 10 X 4	15
TN2 0900											24 X 12 X 6	18
TN2 1000											32 X 12 X 6	20
TN2 1100											42 X 12 X 6	22
TN2 1200											44 X 16 X 8	30
TN2 1300											66 X 16 X 8	35
TN2 1400										3/8" NPT	44 X 20 X 8	40
TN2 1500									3/4" NPT		66 X 24 X 8	60
TN2 1600											72 X 30 X 12	75
TN2 1700									1" NPT	3/4" NPT	66 X 32 X 8	110
TN2 1800											66 X 40 X 8	135
TN2 1900											72 X 42 X 12	160
TN2 2000											66 X 60 X 8	180
TN2 2100											72 X 54 X 12	225
TN2 2200											72 X 66 X 12	300

(1) The model number for a Basic series is indicated by TN2B. For the Essentials series it is indicated by TN2E.
(2) For operating pressures above 150 PSIG, consult factory.
(3) The dimensions shown reflect the estimated space required for field installation based on a vertical orientation of the membrane module. They should be considered approximate values only.
(4) The shipping weights reflect an approximation of the boxed weight of the components for a TN2 Essentials unit. The weight of TN2 Basic unit will be slightly less.
(5) The specification data shown is subject to change due to design modifications or updates without prior notice.

TN2 Total Series

Specifications (4)											
TN2 Total Series	Atmospheric Dew Point	Operating Pressure (1)		Inlet Air Temperature		Maximum Inlet Air Dew Point	Electrical Requirements (2)		Connections		Dimensions (Inches) H X W X D	Shipping Weight (3) (lbs.)
		Min	Max[1]	Min	Max		Power	Kw	In	Out		
TN2T0800	To -90°F Typical	70 PSIG	150 PSIG	70°F	120°F	120°F	115/1/60	0.50	3/8" NPT	1/4" NPT	30 X 16 X 8	105
TN2T0900											24 X 16 X 8	90
TN2T1000											36 X 24 X 8	125
TN2T1100											48 X 24 X 8	150
TN2T1200												175
TN2T1300											78 X 30 X 12	365
TN2T1400											48 X 30 X 10	285
TN2T1500								1.00	3/4" NPT	3/8" NPT	78 X 30 X 12	500
TN2T1600										1/2" NPT	78 X 36 X 12	575
TN2T1700								1.50	1" NPT	3/4" NPT	78 X 36 X 16	600
TN2T1800												650
TN2T1900												675
TN2T2000							480/3/60	3.00	1-1/2" NPT	1" NPT		700
TN2T2100											84 X 60 X 24	1250
TN2T2200								4.50	2" NPT	1-1/2" NPT	84 X 72 X 24	1500
TN2T2300												1550
TN2T2400												1600

(1) For operating pressures above 150 PSIG, consult factory.
(2) For other voltages, consult factory. The Kw values shown are full load values; actual Kw consumption will vary based on actual conditions and will be, on average, considerably less.
(3) The shipping weights are approximate values. For more current shipping weights, consult factory.
(4) The specification data shown is subject to change due to design modifications or updates without prior notice.

For applications requiring greater capacity or purity, please consult the factory for our TN2 Extended Line nitrogen generation solutions.

TN2 Basic/Essentials Flow Rates (SCFH) @ 100 PSIG, 80°F Inlet Air Conditions*														
TN2B/TN2E Series	95% Purity		96% Purity		97% Purity		98% Purity		99% Purity		99.5% Purity		99.9% Purity	
	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2
TN2 0800	22.9	10.6	20.4	8.9	18.6	7.3	16.9	5.7	15.0	4.1	13.7	3.0	12.2	1.7
TN2 0900	38.2	17.6	34.9	14.6	31.8	11.8	28.7	9.0	25.3	6.2	23.2	4.4	20.7	2.9
TN2 1000	97.1	46.0	89.1	38.6	81.4	31.7	73.7	24.9	65.3	17.7	60.0	13.2	53.1	7.5
TN2 1100	164.0	77.7	151.0	65.3	138.0	53.7	125.0	42.2	110.0	29.9	102.0	22.3	89.9	12.5
TN2 1200	291.0	138.0	267.0	116.0	244.0	95.0	221.0	74.7	196.0	52.9	180.0	39.5	159.0	22.1
TN2 1300	478.0	226.0	438.0	190.0	400.0	156.0	363.0	123.0	321.0	86.9	295.0	64.8	261.0	36.4
TN2 1400	582.0	276.0	534.0	232.0	488.0	190.0	442.0	149.4	392.0	105.8	360.0	79.0	318.0	44.2
TN2 1500	956.0	452.0	876.0	380.0	800.0	312.0	726.0	246.0	624.0	173.8	590.0	129.6	522.0	72.8
TN2 1600	1204	570.0	1104	479.0	1009	393.0	914.0	309.0	810.0	219.0	744.0	163.0	659.0	91.6
TN2 1700	1434	678.0	1314	570.0	1200	468.0	1089	369.0	963.0	260.7	885.0	194.4	783.0	109.2
TN2 1800	1912	904.0	1752	760.0	1600	624.0	1452	492.0	1284	347.6	1180	259.2	1044	145.6
TN2 1900	2408	1140	2208	958.0	2018	786.0	1828	618.0	1620	438.0	1488	326.0	1318	183.2
TN2 2000	2868	1356	2628	1140	2400	936.0	2178	738.0	1926	521.4	1770	388.8	1566	218.4
TN2 2100	3612	1710	3312	1437	3027	1179	2742	927.0	2430	657.0	2232	489.0	1977	274.8
TN2 2200	4816	2280	4416	1916	4036	1572	3656	1236	3240	876.0	2976	652.0	2636	366.4

* For TN2 Basic & Essentials units, pre-drying of compressed air is required.

TN2 Total Flow Rates (SCFH) @ 100 PSIG, 80°F Inlet Air Conditions														
TN2T Series	95% Purity		96% Purity		97% Purity		98% Purity		99% Purity		99.5% Purity		99.9% Purity	
	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2	Inlet Air	Outlet N_2
TN2T0800	36.4	15.6	33.0	12.8	30.4	10.4	27.8	8.1	24.9	5.6	23.0	4.0	20.9	2.1
TN2T0900	62.3	25.8	57.3	21.3	52.5	17.0	47.8	12.9	42.8	8.5	39.7	5.9	35.9	3.6
TN2T1000	156.0	66.7	144.0	55.7	133.0	45.3	121.0	35.1	109.0	24.2	101.0	17.6	91.2	9.3
TN2T1100	264.0	113.0	244.0	94.2	224.0	76.6	205.0	59.4	184.0	41.0	171.0	29.7	154.0	15.6
TN2T1200	468.0	200.0	432.0	167.0	397.0	136.0	363.0	105.0	326.0	72.6	303.0	52.6	273.0	27.5
TN2T1300	768.0	328.0	709.0	274.0	653.0	223.0	597.0	173.0	535.0	119.0	497.0	86.5	449.0	45.2
TN2T1400	936.0	400.0	864.0	334.0	794.0	272.0	726.0	210.0	652.0	145.2	606.0	105.2	546.0	55.0
TN2T1500	1536	656.0	1418	548.0	1306	446.0	1194	346.0	1070	238.0	994.0	173.0	898.0	90.4
TN2T1600	1937	827.0	1787	691.0	1645	562.0	1503	436.0	1349	301.0	1253	218.0	1131	114.0
TN2T1700	2304	984.0	2127	822.0	1959	669.0	1791	519.0	1605	357.0	1491	259.5	1347	135.6
TN2T1800	3072	1312	2836	1096	2612	892.0	2388	692.0	2140	476.0	1988	346.0	1796	180.8
TN2T1900	3874	1654	3574	1382	3290	1124	3006	872.0	2698	602.0	2506	436.0	2262	228.0
TN2T2000	4608	1968	4254	1644	3918	1338	3582	1038	3210	714.0	2982	519.0	2694	271.2
TN2T2100	5811	2481	5361	2073	4935	1686	4509	1308	4047	903.0	3759	654.0	3393	342.0
TN2T2200	7748	3308	7148	2764	6580	2248	6012	1744	5396	1204	5012	872.0	4524	456.0
TN2T2300	9685	4135	8935	3455	8225	2810	7515	2180	6745	1505	6265	1090	5655	570.0
TN2T2400	11622	4962	10722	4146	9870	3372	9018	2616	8094	1806	7518	1308	6786	684.0

Ask Us About These Other Great Products from Titus Air Systems:

TNX Series Expandable Nitrogen Generators

TDX Series Expandable Compressed Air Dryers

TDD Series Desiccant Compressed Air Dryers

THF High Efficiency Compressed Air Filters

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