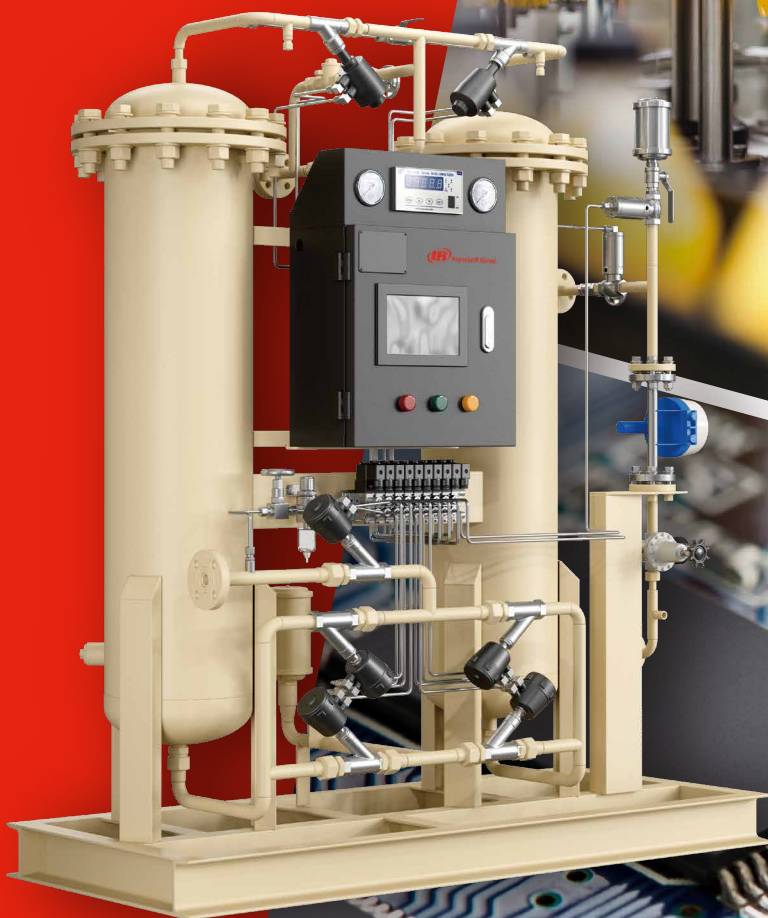




Ingersoll Rand IRNG Series Nitrogen Generators



IRNG Series Nitrogen Generators

Applications



Biotechnology and pharmaceuticals



Oil and natural gas



Steel and metallurgy



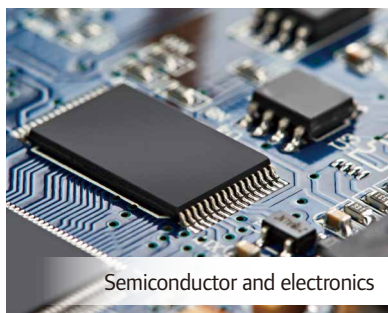
Chemical industry



Textile industry



Tire and rubber manufacturing



Semiconductor and electronics



Food and beverage



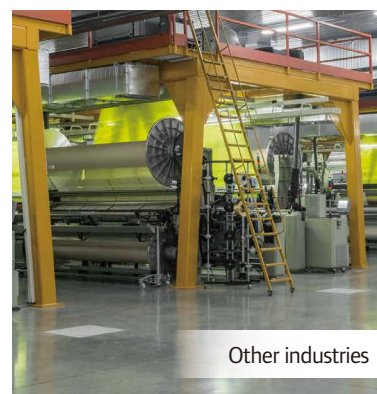
Coal mining industry



New energy and lithium battery



Heat treatment processes



Other industries

IRNG Series Nitrogen Generators

In modern industrial production, nitrogen, as an important inert protective gas, is widely used in fields such as chemical processing, electronics, food preservation, pharmaceuticals, and metal treatment. The Ingersoll Rand IRNG Series nitrogen generators utilize advanced Pressure Swing Adsorption (PSA) technology combined with a precise intelligent control system to provide an efficient, cost-effective, and reliable on-site nitrogen generation solution.

Working Principle

This product is based on mature Pressure Swing Adsorption (PSA) technology.

Compressed Air Pretreatment

Ambient air is first compressed by an air compressor and then passes through a high-efficiency filtration system to remove oil, moisture, dust, and other impurities, ensuring that clean and dry air enters the main unit.

Carbon Molecular Sieve Separation

The treated clean compressed air enters adsorption towers filled with specialized carbon molecular sieves. These sieves feature dynamic selective adsorption properties: under pressurized conditions, oxygen, carbon dioxide, and water vapor are preferentially adsorbed, while nitrogen molecules, due to their larger molecular diameter, are not readily adsorbed. This allows nitrogen to pass through and become enriched, producing high-purity nitrogen.

Dual-Tower Cycling and Regeneration

The system uses a dual-tower design. While one tower performs adsorption to generate nitrogen, the other tower undergoes rapid depressurization to desorb and discharge the previously adsorbed oxygen and other impurities, thereby regenerating the carbon molecular sieve. The two towers alternate in operation, ensuring continuous and stable nitrogen output.



Product Features

Low Operating Cost

One-time investment with long-term benefits. Compared to externally purchased nitrogen, gas consumption costs can be reduced by up to 50%–80%. The equipment features low energy consumption and fully automated operation, minimizing manual intervention.

Flexible and Adjustable Purity

Nitrogen purity can be precisely adjusted within a wide range of 95% to 99.999% to meet the stringent requirements of different industries and processes.

On-Demand Generation with Stable Supply

The system is fully automated, producing nitrogen immediately upon start-up with no waiting time. Dependence on third-party suppliers is eliminated, avoiding delivery delays and ensuring continuous operation of your production line.

Safe and Environmentally Friendly

On-site nitrogen generation eliminates the risks associated with storing and handling high-pressure gas cylinders or liquid nitrogen tanks. The entire process relies on physical separation only, with no chemical contamination, making it a green and environmentally friendly solution.

Intelligent Control

Equipped with an advanced PLC touchscreen control system, the unit enables real-time monitoring of key parameters such as purity, flow rate, and pressure. It features fault self-diagnosis and alarm functions, and supports ES load-adaptive energy-saving operation.

Configuration Parameters

- Nitrogen capacity: 5–2000 m³/h (customizable according to requirements)
- Nitrogen purity: 95%–99.999%
- Operating pressure: 0.1–0.75 MPa
- Atmospheric dew point: –60 °C
- Inlet air temperature: ≤35 °C
- Maximum pressure drop: ≤0.015 MPa
- Control system: PLC control with touchscreen human–machine interface (HMI)

Model	Rated inlet volumetric flow (m ³ /h)	Nitrogen purity	Electrical parameters	Unit weight (kg)	Dimensions LxWxH (mm)
IRNG5-295	5	99.5%	230v/1ph/50hz	88	1100×500×1100
IRNG10-295	10			124	1250×550×1300
IRNG20-295	20			256	1450×650×1400
IRNG30-295	30			277	1550×750×1500
IRNG40-295	40			410	1650×800×1500
IRNG60-295	60			493	1650×800×2100
IRNG80-295	80			677	1850×850×2500
IRNG100-295	100			882	1950×900×2350
IRNG150-295	150			1177	2050×950×2700
IRNG200-295	200			1465	2150×1100×2950
IRNG250-295	250			1737	2250×1150×3000
IRNG300-295	300			2286	2350×1200×3050
IRNG400-295	400			2956	2550×1300×3200
IRNG500-295	500			3594	2750×1400×3350
IRNG600-295	600			4609	2850×1450×3400
IRNG700-295	700			5580	3050×1550×3350
IRNG800-295	800			6001	3050×1550×3500
IRNG1000-295	1000			7015	3150×1600×3600
IRNG1200-295	1200			8896	3350×1700×3650
IRNG1500-295	1500			11194	5900×1600×3550
IRNG2000-295	2000			14312	6300×1700×3750

IRNG Series Nitrogen Generators

Model	Rated inlet volumetric flow (m ³ /h)	Nitrogen purity	Electrical parameters	Unit weight (kg)	Dimensions LxWxH (mm)
IRNG5-39	5	99.9%	230v/1ph/50hz	110	1300×550×1150
IRNG10-39	10			130	1400×600×1150
IRNG20-39	20			277	1500×700×1450
IRNG30-39	30			442	1600×750×1500
IRNG40-39	40			475	1700×800×1600
IRNG60-39	60			719	1900×850×2100
IRNG80-39	80			765	1900×800×2250
IRNG100-39	100			1074	2000×900×2450
IRNG150-39	150			1499	2200×1000×2600
IRNG200-39	200			1859	2300×1150×2850
IRNG250-39	250			2486	2400×1200×3050
IRNG300-39	300			2965	2500×1250×3250
IRNG400-39	400			3662	2700×1350×3300
IRNG500-39	500			5220	2900×1450×3550
IRNG600-39	600			5851	3000×1500×3700
IRNG700-39	700			6703	3100×1550×3900
IRNG800-39	800			7455	3300×1650×3950
IRNG1000-39	1000			10429	5750×1550×3600
IRNG1200-39	1200			11702	5950×1600×3750
IRNG1500-39	1500			14233	6350×1700×3950
IRNG2000-39	2000			19595	7150×1900×3950
IRNG5-49	5	99.99%	230v/1ph/50hz	110	1400×620×1280
IRNG10-49	10			130	1500×650×1300
IRNG20-49	20			275	1700×750×1500
IRNG30-49	30			523	1800×800×2150
IRNG40-49	40			762	1900×850×2250
IRNG60-49	60			1071	2000×900×2450
IRNG80-49	80			1326	2100×950×2650
IRNG100-49	100			1601	2200×1100×2750
IRNG150-49	150			2049	2400×1200×3100
IRNG200-49	200			3040	2600×1400×3250
IRNG250-49	250			3507	2700×1450×3300
IRNG300-49	300			4133	2800×1500×3650
IRNG400-49	400			6020	3100×1650×3800
IRNG500-49	500			7479	5300×1450×3500
IRNG600-49	600			8494	5500×1500×3700
IRNG700-49	700			10938	5700×1550×3900
IRNG800-49	800			12253	6100×1650×3900
IRNG1000-49	1000			16365	8700×1550×3800
IRNG1200-49	1200			18061	10350×2100×3800
IRNG1500-49	1500			22658	11550×2200×3700
IRNG2000-49	2000			33036	19500×1850×3700
IRNG5-59	5	99.999%	230v/1ph/50hz	113	1400×650×1300
IRNG10-59	10			308	1600×700×1550
IRNG20-59	20			556	1800×800×2250
IRNG30-59	30			827	1900×850×2350
IRNG40-59	40			1151	2000×900×2550
IRNG60-59	60			1452	2200×1000×2800
IRNG80-59	80			2012	2400×1100×2850
IRNG100-59	100			2679	2400×1100×3000
IRNG150-59	150			3752	2700×1350×3400
IRNG200-59	200			4828	2900×1550×3600
IRNG250-59	250			5050	3000×1600×3750
IRNG300-59	300			7504	3100×1650×4150



Ingersoll Rand Inc. (NYSE:IR), driven by an entrepreneurial spirit and ownership mindset, is dedicated to Making Life Better for our employees, customers, shareholders, and planet. Customers lean on us for exceptional performance and durability in mission-critical flow creation and industrial solutions. Supported by over 80+ respected brands, our products and services excel in very complex and harsh conditions. Our employees develop customers for life through their daily commitment to expertise, productivity, and efficiency. For more information, visit www.IRco.com.



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