

PRISM[®] Cryogenic Nitrogen Generation Systems

EXPERIENCE AND UNDERSTANDING. THESE ATTRIBUTES ALLOW AIR PRODUCTS TO RELIABLY DELIVER A COST-EFFECTIVE NITROGEN GENERATOR SOLUTION TO MEET THE NEEDS OF YOUR APPLICATION.



| dependable nitrogen supply solutions |

Air Products' PRISM HPN and GN generators provide cryogenic purity gaseous nitrogen at flow rates from less than 700 Nm³/hr to more than 3500 Nm³/hr, providing a highly reliable gas supply at an overall cost savings compared to delivered liquid nitrogen. Our PRISM HPN generators are also capable of producing nitrogen gas with oxygen impurities at the parts per billion level. The on-site generator's modular design allows for easy installation and fast start-up with unattended operation. A programmable logic controller ensures dependable operation, and our advanced telemetry permits remote monitoring by the global Air Products

on-site operations team. An integrated liquid nitrogen backup system helps ensure uninterrupted supply.

To generate nitrogen with maximum efficiency, the PRISM HPN generator incorporates a proprietary air separation process. The system's design reduces maintenance requirements, thus enhancing dependable gas supply. Air Products' HPN and GN generators are installed around the world, and our regional project execution teams ensure compliance with local design requirements and specifications.



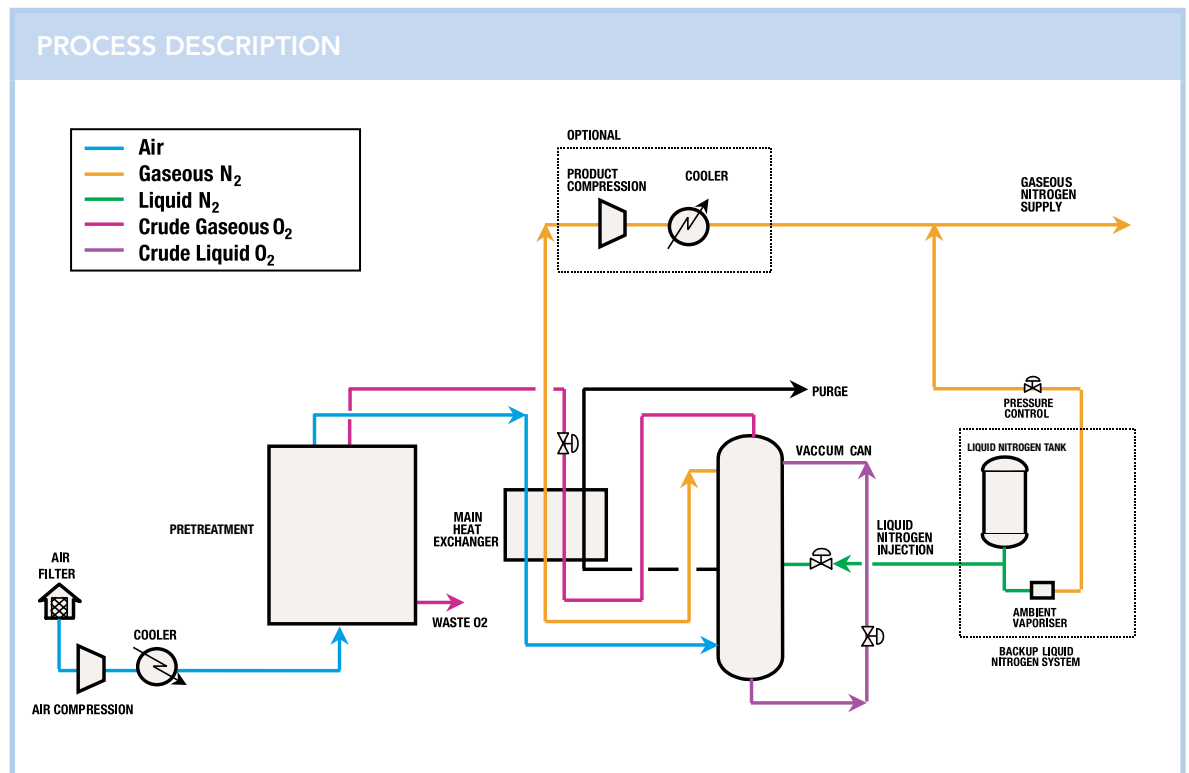
We serve customers across a broad range of industries, and this has enabled us to develop a standardized product family with engineered features, enabling us to meet individual requirements. Our global success has been built on providing our customers with economical on-site nitrogen gas supply based on fundamental cryogenic technology expertise and our commitment to continuous improvement.

| process description |

Atmospheric air is compressed in the main air compressor of the nitrogen generator system and cooled in the compressor aftercooler. The air then passes through a pretreatment system to remove water vapor, carbon dioxide, and hydrocarbons.

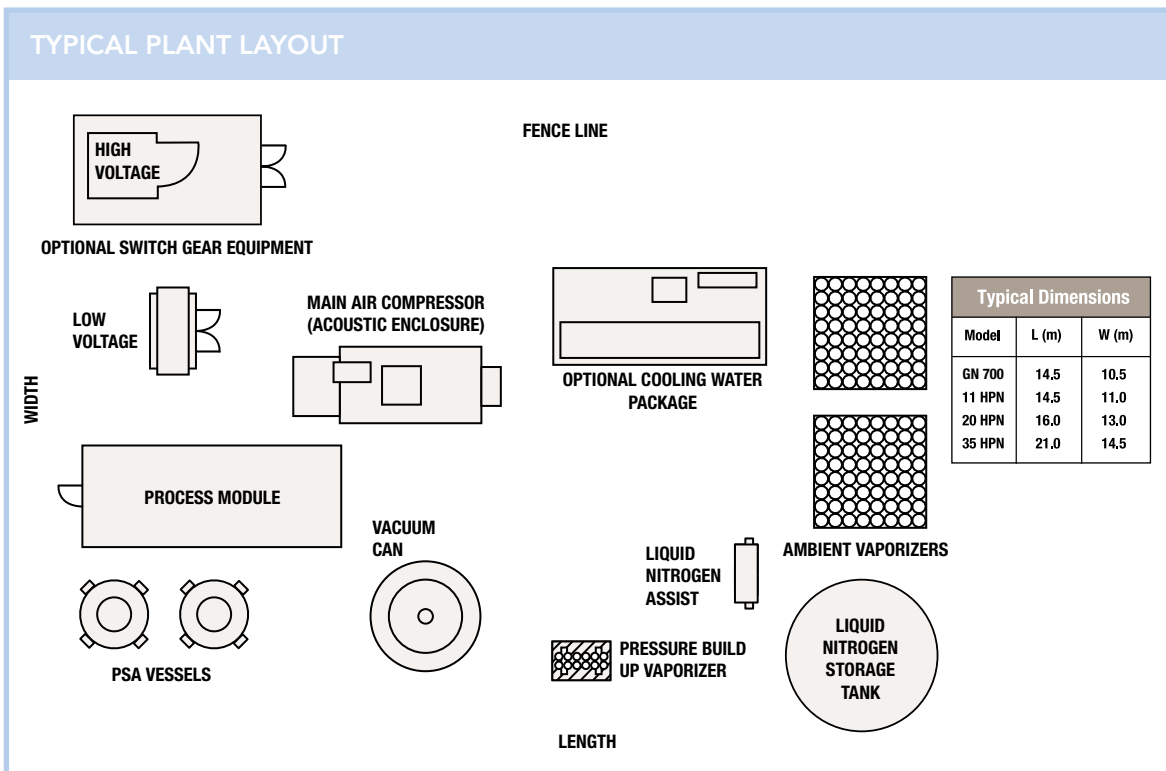
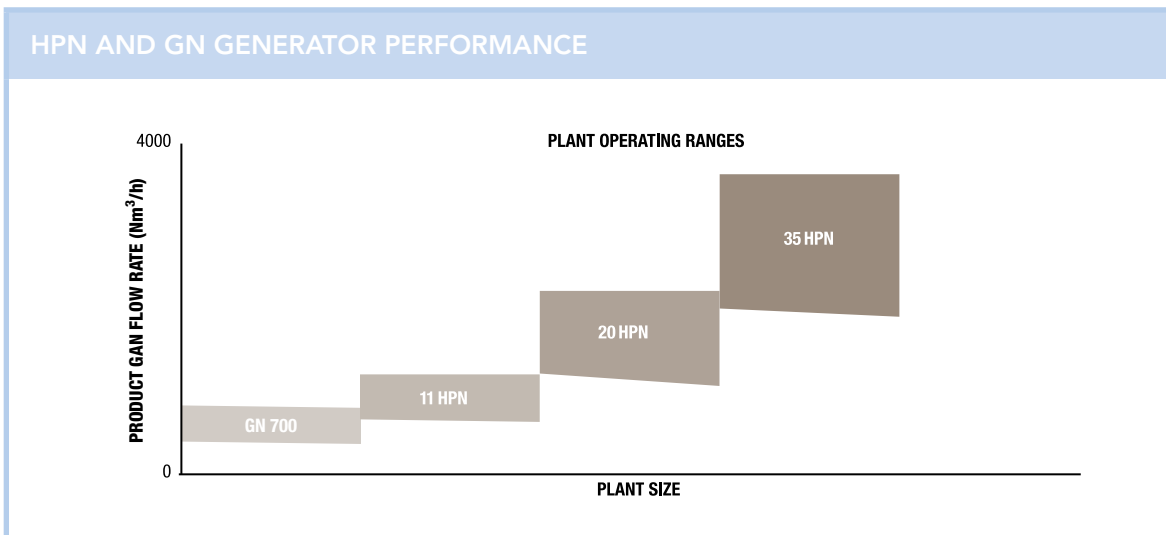
Inside the vacuum can, the air is cooled and partially liquefied by exchange against outgoing process streams in the main heat exchanger. The cold, partially liquefied air and gas mixture passes into the distillation column. Here the mixture is separated by distillation into nitrogen gas and oxygen-enriched liquid.

The cryogenic nitrogen generator process uses a small stream of liquid nitrogen from the storage tank to provide the refrigeration balance required in the nitrogen generator. Only a small amount of liquid is required to balance the process heat gain, since the column is vacuum insulated and the main heat exchanger is highly efficient.



generator performance |

The PRISM HPN and GN generator product family covers a range of gaseous nitrogen requirements. The diagram below outlines the general performance capabilities of the various plants. The left side of each range represents 3 barg product pressure, and the right side represents 9 barg product pressure.



FEATURES AND BENEFITS	
Cost-Effective Gas Supply	Standard, pre-engineered product range
	Highly skidded, modular design for low-cost site installation
	Compact design requires minimal plot space
	Low pressure design with product compression
	Fully automated controls for unattended operation
High Reliability for Dependable Gas Supply	Single, integrally geared air compressor
	Integrated instrument air system
	Full local and remote operation with automatic call-out for 24/7 support
Flexibility	Load following turndown provides power savings at reduced nitrogen consumption rate
	Customer and local code requirements can be supported within product design envelope

| worldwide |

GLOBAL EXPERTISE DELIVERED LOCALLY

With local expertise around the world, Air Products is focused on delivering reliable, cost-effective gas supply solutions based on understanding your needs. Visit your local country website or contact your local office below to see how we can help you.

North America

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
USA
Tel 800-654-4567
Tel 610-481-4911
Fax 800-272-4449
Fax 610-706-7394
Email gigmrktg@airproducts.com

Europe

Air Products PLC
Hersham Place Technology Park
Molesey Road
Hersham
Walton-on-Thames
Surrey KT12 4RZ
United Kingdom
Tel +44 0800 3890202
Email apbulkuk@airproducts.com

Latin America and South Africa

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
USA
Tel 610-481-4911
Fax 610-706-8782
Email gigmrktg@airproducts.com

Asia

Air Products and Chemicals, Inc.
East Wing, Floor 1
Building #88, Lane 887
Zu Chong Zhi Rd.
Zhangjiang High-Tech Park
Shanghai, 201203
China
Tel +86 21 38962000
Fax +86 21 50803333
Email gigmrktg@airproducts.com



tell me more
www.airproducts.com/gasgeneration