Modular Heatless Desiccant Air Dryers

FLOW CAPACITY: 3 to 1110 scfm

“We choose nano modular desiccant air dryers as they were the best option for space and provided us with the ability to fit where needed.”

Oil and gas equipment manufacturer - Texas, USA

Clean, dry compressed air is essential for efficient and reliable manufacturing. Untreated ambient air contains moisture, dust, and contaminants that can cause corrosion, bacterial growth, and equipment failure, leading to increased maintenance, downtime, and product spoilage. While filters remove particles and liquids, they can’t eliminate moisture vapor, which condenses as air temperature and pressure change.

Desiccant air dryers effectively remove this moisture by using a drying agent to lower the dew point, making them ideal for critical or low-temperature applications. They protect systems from corrosion, ensure compliance with strict air quality standards, and help maintain product quality. With improved reliability and reduced energy waste, desiccant dryers boost operational efficiency and cut long-term costs.

Multi-Bank Design

The unique multi-bank design enables additional dryers to be added in the future as demand increases and provides redundancy for ease of maintenance. Your nano modular desiccant air dryer can grow with your company.

nano $D^{1|2|3}$ Modular Desiccant Compressed Air Dryers

- Removal of water vapor by lowering the pressure dew point of your compressed air stream to -40°F(-94°F optional) to ensure a continuous supply of dry air.
- Low pressure drop and consistent dew point performance.
- Modular design allows installation in spaces too small for a traditional dryer.
- Premium controller option.
- Ease of service with patented, pre-assembled snowstorm filled desiccant and built in after filter cartridges on D^1 and D^2 ranges.
- Low noise during the exhaust and regeneration cycle.
- Energy saving dew point control option available.
- Many other options available to suit your installation.

Features

Reliable High Performance Valves

- D[1] (NDL 010 to NDL 050) use integrated check valves and two pilot operated solenoid valves for proven performance and reliability.
- D[2] (NDL 060 to NDL 130) use four pilot operated solenoid valves.
- D[3] (NDL 2110 to NDL 6130), Inlet, exhaust and outlet air are controlled using coaxial flow valves integrated into the upper and lower manifolds provide unrestricted flow capacity and designed for durability, ease of maintenance and long service life.

Patented Combined Filter & Desiccant Cartridges

- High density snowstorm filled desiccant provides maximum adsorption capacity and built in inlet water separator (D[1]) only eliminates the cost and pressure drop of installing a separate inlet filter in small oil-free compressor applications.
- Built in outlet filtration to eliminate the cost, pressure drop and maintenance associated with a separate after filter.
- Easy to replace cartridges simplify maintenance requirements D[1] & D[2].

PLC Controlled

- Operated by a robust and reliable PLC control system offering valuable features including 'power on', 'hours run' and 'service required' indicators memory retention built into the PLC enables the controller to pick up where it left off in the drying cycle, ensuring consistently clean, dry air downstream.

Floor or Wall Mounted

- Can be floor or wall mounted - simply by rotating the feet 90 (standard on D[1], optional on D[2]).

Unique Exhaust Air Silencers

- Significantly reduces noise level during depressurization and purge cycles.

Constant Flow and Pressure

- Pressure is equalised before switching columns to ensure uninterrupted compressed air and consistent air pressure. Equalization also ensures long desiccant life due to minimized desiccant attrition.

Tower Gauges

- Standard on models D[2] & D[3]

Performance Validated Filtration

- Separate GFN 0.01 micron pre filter (shipped loose) and a built in 1.0 micron after filter included as standard

Maximum Corrosion Protection

- High tensile aluminum columns are alocrom protected then externally powder coated to provide maximum protection in corrosive environments.

Benefits

Complete range to suit any requirement

- 20 models available with flow rates from 3 to 1110 scfm
- Designed for use in compressor room, point of application or integrated into original equipment.

Guaranteed Performance

- In accordance with ISO 8573.1:2010, Class 2 dirt (1 micron) and Class 2 water (-40ºF pressure dew point). Class 1 water (-94ºF) as an option.

Easy to install space Saving Design

- The compact design allows installation in spaces too small for a traditional design.
- Easy to install & ready for use, the D^1 includes brackets for either, D^2 require an additional mounting kit for either floor or wall mounting.

Simplicity of Service

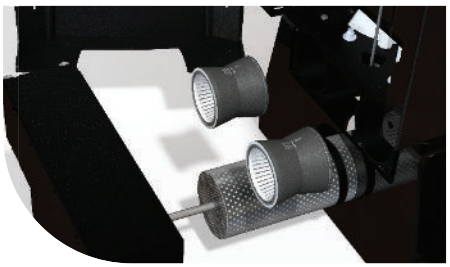
- Patented, pre-assembled snowstorm filled desiccant cartridges (D^1 & D^2) can be serviced in less than 15 minutes.
- Snowstorm filled columns with a built in 1 micron after filter (D^3)

High Quality Construction

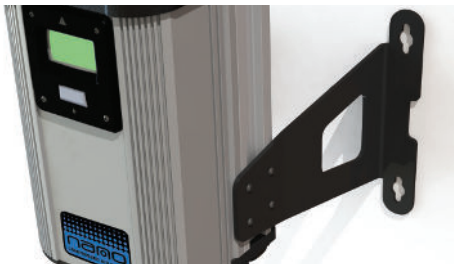
- 100% tested for leaks, proper operation and dew point performance.

Warranty

- Back by a 5 year product warranty with addition of Energy Saving Dew Point Control (-ES)



Reliable, High Performance Valves



Floor or Wall Mounted

Patented Combined Filter & Desiccant Cartridges

Optional Upgrades

HMI Communications Upgrade

- An electronics upgrade with the latest colour HMI display allows multilingual access to Modbus TCP communication, web portal monitoring, real time dew point display and a host of other functions such as manual valve operation for troubleshooting, service details and remote start/stop activation.

Energy Saving Dew Point Control

- With this option, a dew point sensor and display is incorporated into the dryer providing the ultimate in energy and power savings.
- Outlet dew point is constantly monitored allowing the cycle time to be adjusted depending on the actual moisture load saving valuable purge air on all styles of dryers.
- Easily field retrofit

Other

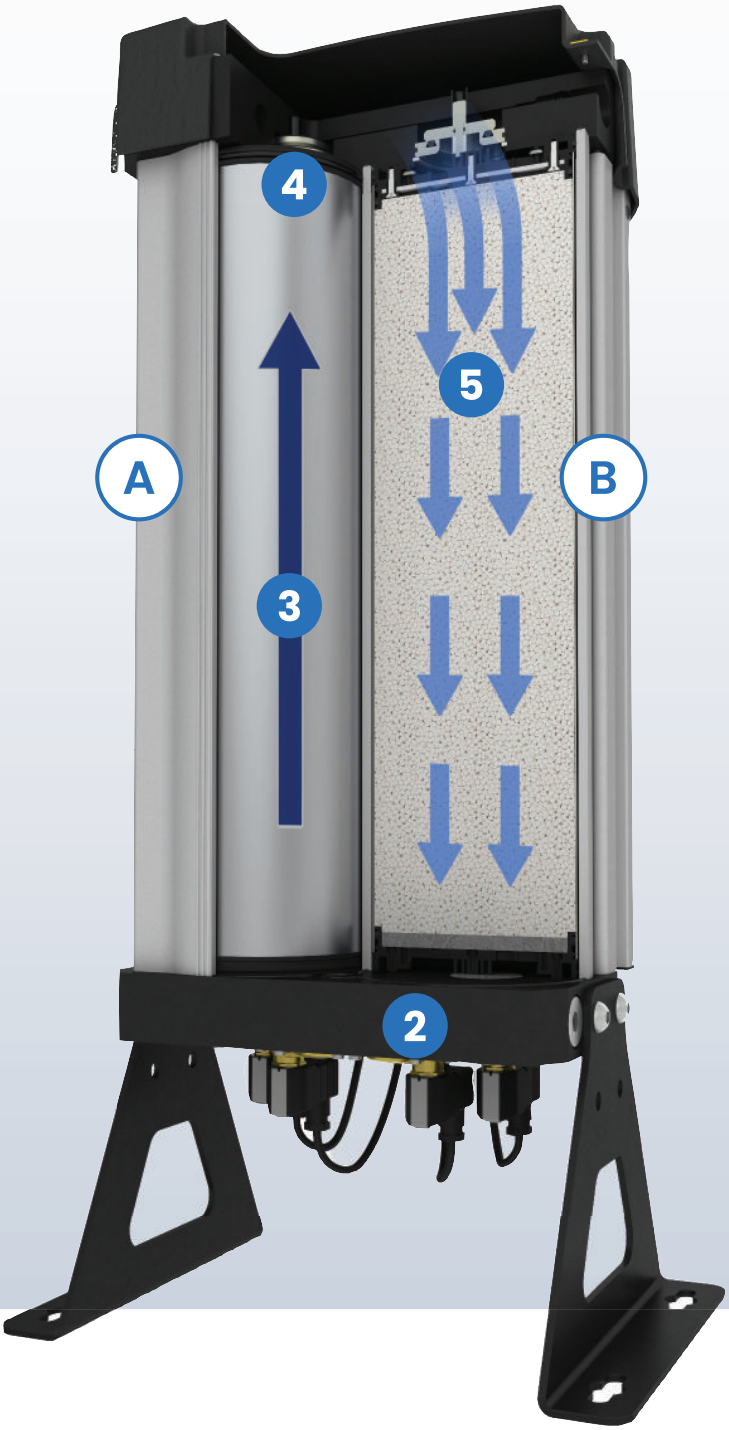
- 232 psig (MAWP) for higher pressure applications.
- Pneumatic controls; for safe operation, in remote locations where power is either limited or unavailable (available in D^2 and D^3 ranges).

How it works

Efficiently dry compressed air

The nano D[1|2|3] modular desiccant air dryers use the pressure swing adsorption principle to efficiently dry compressed air. They use a twin tower configuration housed in a modular design. Each column contains a unique (and patented) desiccant cartridge which incorporates an inlet water separator (D[1] only) and outlet filtration.

1. 0.01 micron pre-filter (external) removes all particulate, liquid water and oil aerosols to 0.01 ppm.
2. Clean, saturated air enters the dryer is a directed into Column A.
3. Compressed air travels through Column A for 2 minutes and moisture vapor is adsorbed to -40°F pdp or better.
4. A final built-in filter removes particulate to 1.0 micron or better.
5. ~20% purge air expands through an orifice and regenerates Column B.
6. After 30 seconds, the purge exhaust valve closes and Column B repressurizes and is ready for adsorption to begin.
7. At the 2-minute mark (fixed cycle), Column A exhaust valve opens to regenerate. A PLC controls all operations.
8. Compressed air is expensive but nano dryers can be fitted with an energy savings device to save air and save money. By measuring actual pressure dew point, the PLC will extend the dryer cycle reducing compressor energy, wasted purge air and valve wear and tear.



Product Specifications

MODEL	SERIES	INLET & OUTLET (1)	RATED FLOW (1)	DIMENSIONS (INCHES)			WEIGHT	FILTRATION (3)	
		NPT	SCFM	A	B	C	LBS	PRE FILTER	AFTER FILTER
NDL 010 GFN	D1	⅜"	3	17.3	10.4	8.7	19.8	GFN 0006 M01	Integrated
NDL 020 GFN	D1	⅜"	5	17.3	10.4	8.7	19.8	GFN 0006 M01	Integrated
NDL 030 GFN	D1	⅜"	10	25.6	10.4	8.7	29.8	GFN 0015 M01	Integrated
NDL 040 GFN	D1	⅜"	15	35.0	10.4	13.0	40.8	GFN 0015 M01	Integrated
NDL 050 GFN	D1	½"	20	46.8	10.4	13.0	56.2	GFN 0025 M01	Integrated
NDL 060 GFN	D2	1"	34	29.2	16.8	11.1	88	GFN 0050 M01	Integrated
NDL 070 GFN	D2	1"	41	29.2	16.8	11.1	88	GFN 0050 M01	Integrated
NDL 080 GFN	D2	1"	53	36.3	16.8	11.1	119	GFN 0070 M01	Integrated
NDL 090 GFN	D2	1"	66	36.3	16.8	11.1	119	GFN 0070 M01	Integrated
NDL 100 GFN	D2	1"	88	43.2	16.8	11.1	141	GFN 0105 M01	Integrated
NDL 110 GFN	D2	1"	016	49.1	16.8	11.1	167	GFN 0125 M01	Integrated
NDL 120 GFN	D2	1"	132	58.9	16.8	11.1	200	GFN 0175 M01	Integrated
NDL 130 GFN	D2	1"	177	72.7	16.8	11.1	247	GFN 0175 M01	Integrated
NDL 2110 GFN	D3	2"	212	50.0	15.7	26.9	214	GFN 0280 M01	Integrated
NDL 2120 GFN	D3	2"	276	59.9	15.7	26.9	394	GFN 0280 M01	Integrated
NDL 2130 GFN	D3	2"	400	73.7	15.7	26.9	575	GFN 0450 M01	Integrated
NDL 3130 GFN	D3	2"	560	73.7	15.7	33.4	548	GFN 0700 M01	Integrated
NDL 4130 GFN	D3	2 ½"	750	73.7	15.7	40.0	729	GFN 0850 M01	Integrated
NDL 6120 GFN	D3	2 ½"	828	59.9	15.7	53.2	967	GFN 0850 M01	Integrated
NDL 6130 GFN	D3	2 ½"	1110	73.7	15.7	53.2	1373	GFN 1250 M01	Integrated

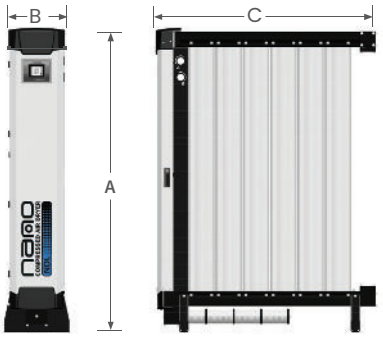
SPECIFICATIONS	STANDARD	OPTIONAL
Maximum particle size (ISO Class) (4)	class 2 (1 micron)	class 1 (0.01 micron) (5)
Maximum water content (ISO Class) (4)	class 2 (-40°F pdp)	class 1 (-94°F)
Minimum operating pressure (psig) (6)	58	-
Maximum operating pressure (psig)	145 /232 (6)	(D3) 232
Recommended operating temp range (°F)	35 to 100	-
Design operating temperature range (°F)	35 to 122	-
Power supply requirements	85 to 264V AC 50/60 Hz	24V DC

PRESSURE CORRECTION FACTORS (7)							
Operating pressure (psig)	60	75	90	100	115	130	145
Correction factor	0.63	0.75	0.88	1.00	1.13	1.25	1.38

TEMPERATURE CORRECTION FACTORS (7)						
Inlet temp (°F)	77	86	95	104	113	122
Correction factor	1.0	1.0	1.0	0.9	0.8	0.7

(1) NDL 010 to NDL 050 have push to connect fittings on the inlet and outlet. All other models have NPT threaded connections.
(2) At inlet conditions of 100 psig and 85°F and a -40°F outlet pressure dew point. For all other conditions refer to the correction factors above.
(3) Dryer includes a separate M01 grade pre filter (shipped loose) and a built in 1 micron after filter.
(4) Per ISO 8573:1:2010 (E)
(5) With separate M01 grade after filter
(6) Maximum operating pressure as follows: models NDL 010 to 130 are 232 psig (MAWP) as standard; models NDL 2110 to 6130 are 145 psig (MAWP) as standard (optional 232 psig).
(7) To be used as a rough guide only. All applications should be confirmed by nano. Contact support@airandgassolutions.com.
(8) Technical specifications subject to change without notice. Direct inquiries to support@airandgassolutions.com.

NDL 010 to NDL 130



NDL 2110 to NDL 6130

Experience.
Customer.
Service.

nano

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