Pneumatic Products™

Heat-Les™ Pressure-Swing Desiccant Dryers

CHA Series

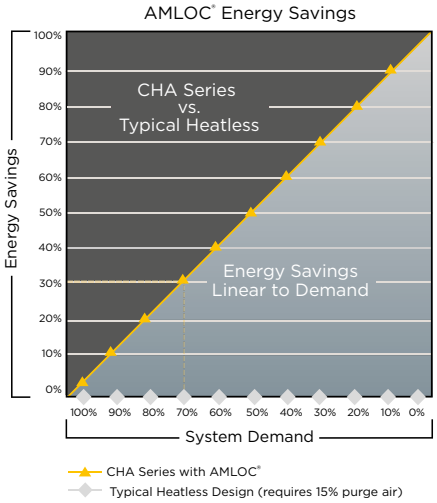
pneumaticproducts.com

2,000 - 14,450 scfm

Simplicity & Versatility

Pneumatic Products Heat-Les™ drying technology is the model of simplicity and the origin of the most common design in use today. CHA Series compressed air and gas dryers offer versatility of application as they excel in hostile environments where corrosive, toxic or explosive elements exist.

Everyone knows, heat rises. Our legendary down flow drying process takes advantage of that principle in storing the heat of adsorption. In regeneration mode, a side-stream of dried process air with an affinity for moisture, leverages the heat of adsorption to dry the off-line desiccant chamber. Exceptional dew point stability to -100°F (-73°C) can be achieved.



Annual Energy Savings

Average Demand	scfm	Typical Heatless Design cost of 15% purge	CHA Series w/AMLOC® controls cost of purge	Energy Savings with CHA Series
100%	3600	$70,578	$70,578	–
85	3060	70,578	59,991	$10,587
70	2520	70,578	49,404	21,174
50	1800	70,578	35,289	35,289
35	1260	70,578	24,702	45,876
20	720	70,578	14,116	56,462

Assumes 5 scfm per HP, 8760 hours of operation per year, 10 cents per kW/h

Since 1946, the world has turned to the Pneumatic Products brand for the quality and service demanded by the most critical of applications. Global leaders of industry require durable components that deliver unquestionable reliability. Our precision engineered components and designs deliver outstanding service life and operational longevity. Invest in our experience and gain annuities that will grow for years.

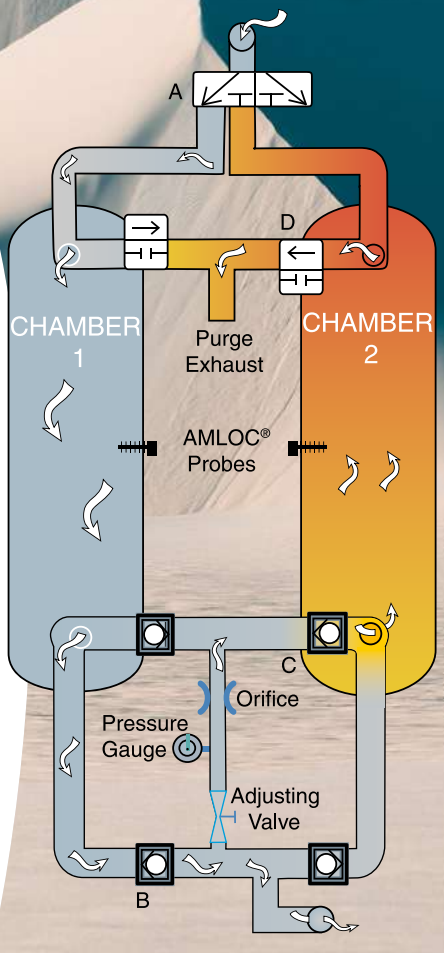
How It Works

Moist, filtered compressed air enters down flow drying Chamber 1 via valve (A). Water vapor is adsorbed onto the desiccant and dry compressed air exits through valve (B), abrasive desiccant dust is captured by an afterfilter when supplied. In regeneration mode, a side-stream of dried process air travels through valve (C) with an affinity for moisture, leverages the heat of adsorption to desorb off-line desiccant Chamber 2. Water vapor releases from the desiccant and evacuates through valve (D) after which our spring loaded flow restrictor controls the rate of depressurization to prevent bed fluidization. Once desorbed, valve (D) closes and Chamber 2 is repressurized. No further energy will be consumed until AMLOC® determines the on-line bed is fully utilized, whereupon, operations will switch and Chamber 1 will be regenerated.

AMLOC® governs our energy management process with precision. Capacitance probes sense the dielectric strength that water vapor imparts on the desiccant, sensing moisture loads to extend the drying cycle while eliminating energy use. Serious performance, reliability and energy savings result as energy consumption mirrors plant air usage.

**Model Shown with Optional Features*

CHA Series Flow Diagram



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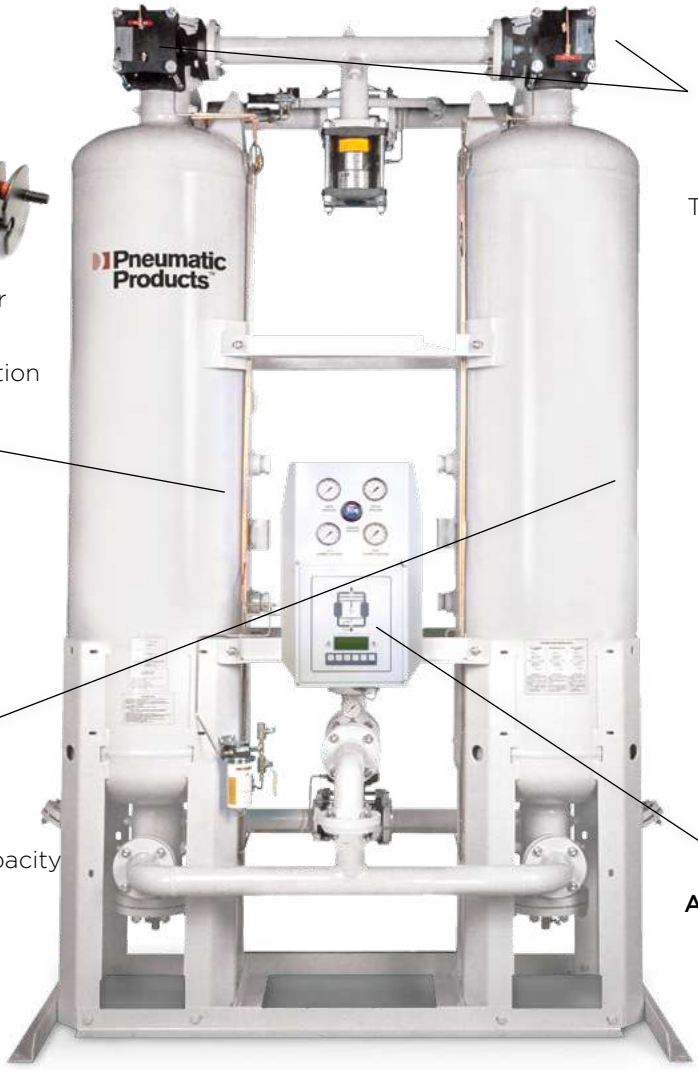
Energy-Efficient Design

Sensory Perception

- AMLOC® Probe proven in over 25,000 installations.
- Lifetime Warranty. No calibration required.



Engineered Performance

Non-lubricated Century Series valves. The ULTIMATE in reliability

PCC & PCS Series Filtration

- Pleated media offers high capacity
- Uniform pore size reduces downstream contamination

AMLOC® Energy Optimizer

Synoptic indication of process phases. RS-485 connection providing MODBUS RTU communication or Ethernet connection providing MODBUS TCP communication available. 4 line X 80 character information center.

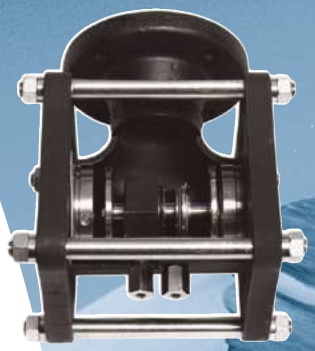
Optional PLC Control

- A/B Micro 800 Series PLC
- 4" Color Touchscreen HMI
- NEMA 4X Fiberglass Enclosure
- RS-485 Modbus RTU, Ethernet, RS-232, USB

Exclusive Feature Details

Process Quality Valves – Engineered Simplicity

Standard off-the-shelf valves under preformed on critical air dryer applications so we engineered our own. Tested under adverse conditions without failure in excess of 500,000 cycles, our full port, air-operated Century Series poppet valves feature stainless steel internals. To protect against wear, a friction-free PTFE coating is applied to all wear surfaces. Corrosion resistant and non-lubricated, these valves were engineered to withstand elevated temperatures, clogging and erosion caused by abrasive desiccant dust. These are the best valves in the industry - period.



SMarT ADC Control System

The SMarT ADC is an update to our time tested, user-friendly electronic synoptic controller for heatless dryer applications. The SMarT ADC builds upon the success of the legendary ADC control system adding new and innovative features.

The SMarT ADC Controller utilizes dual micro-processors to provide advanced communications and improved analog sensor support. The application processor provides the control functions and advanced communications options. The analog microprocessor performs the analog processing tasks including taking readings from various process sensors and communicating this data to the application processor. The application processor is a new microcontroller that has the built-in capability to communicate via Ethernet. This capability can be used to communicate over factory ethernet connections and the internet. This connection allows users to remotely monitor via the web interface their equipment's performance, diagnostics, and status indicators.

Additional communications compatibility is provided via the RS-485 connection allowing the controller to communicate with ModBus applications.

Automated Moisture Load Control (AMLOC®)

Today's air system auditors know that it is rare to find a dryer operating at full-load conditions. That is why AMLOC® is standard equipment on every CHA Series dryer we build. AMLOC® Energy Management Systems generate tens-of-thousands of dollars in energy savings annually for industry leaders. Our PTFE coated stainless steel capacitance probes sense the dielectric strength imparted upon the desiccant by the extracted water vapor. The moisture sensing of AMLOC automatically manages the drying cycle and becomes a tool identify aging or fouled desiccant beds, while ensuring constant dewpoint performance.

Pneumatic Products™

Exclusive Feature Details Continued

PCC & PCS Series Filtration

Critical applications and hostile environments demand premium grade products. Global industry leaders rely on PCS & PCC Series filters for their unmatched quality, durability and reliability in tough applications. PPC's large flow filters meet the challenge and provide contaminant protection for the premium grade desiccants used in our dryers as well as contaminant sensitive applications. Power plants, paper mills, refineries, and petro-chemical installations are a few examples of the challenging environments that rely on PPC filters for lasting protection.

Product Feature List

AMLOC® Energy Mangement System	
PTFE coated, stainless steel capacitance sensor	Standard
Desiccant:	
Premium Grade Activated Alumina	Standard
Moisture Indicator	
Aquadex® Visual, Color Change	Standard
ADC Control System w/ AMLOC® Intelligence	
Energy Management System - Automatic Savings	Standard
Extended drying cycles - long component life	Standard
RS-485 port- communications capable	Standard
Operational History Log Stores 20 Events - Simplifies Trouble-Shooting	Standard
Synoptic display with active flow path illumination LEDs	Standard
Class 1, Groups C & D, Division II	
PLC Control	
A/B Micro 800 Series PLC, 4" Color Touchscreen HMI, NEMA 4X Fiberglass Enclosure, RS-485 Modbus RTU, Ethernet, RS-232, USB	Optional
Information Center	
Back-lit LCD - Visual Clarity In Diverse Lighting Conditions	Standard
4 categories: Dryer Status, Service, History, Configuration	Standard
Warning & Alarm Lights	Standard
Alarm Protection Parameters:	
Alarm Failures: Depressurization, Repressurization, On-line Pressure	Standard
Warning: AMLOC® Failure, High Humidity	Standard
Service Reminders: Valves, Desiccant, Filters	Standard

Product Specifications

DRYER MODEL	INLET FLOW[1,2] SCFM		DIMENSIONS[3] INCHES			APPROX[3] WEIGHT	INLET/OUTLET[3] CONNECTIONS	MOUNTED FILTRATION	
	-40°F	-100°F	H	W	D	LB	IN	PREFILTER	AFTERFILTER
2000CHA	2,000	1,200	139	81	78	5,680	4" FLG	PCC124004SU	PCC124004AF
3000CHA	2,970	1,770	142	92	87	7,690	6" FLG	PCC136003SU	PCC136003AF
3600CHA	4,270	2,505	148	107	94	11,550	6" FLG	PCC148004SU	PCC148004AF
4900CHA	5,810	3,480	159	128	103	15,470	6" FLG	PCC160005SU	PCC160005AF
6400CHA	7,600	4,560	165	145	111	19,770	8" FLG	PCC172006SU	PCC172006AF
8100CHA	9,680	5,820	179	170	128	27,390	8" FLG	PCC196008SU	PCC196008AF
10000CHA	11,940	7,164	179	170	140	32,000	10" FLG	PCC11600015SU	PCC11600015AF
12100CHA	14,450	8,670	180	204	160	36,000	10" FLG	PCC11600015SU	PCC11600015AF

1 *@ 100 psig, 100°F -40°F Pressure Dewpoints*

2 *Performance data per CAGI Standard ADF 200 for Dual--Tower Regenerative Desiccant Compressed Air Dryer. Rating conditions are 100°F (37.8°C) inlet 100 psig (6.9 bar) inlet pressure, 100% relative humidity, 100°F (37.8°C) ambient temperature.*

3 *Dimensions, Weights & Inlet/Outlet Connections based on F-01 pre-piped filter options.*

Consult factory for sizing assistance and -100°F pressure dew point applications. Larger models available.

Pictured right: Example of computer generated models to assist customer needs whether standard or modified product configuration

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Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region.

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Pneumatic Products Headquarters
4647 SW 40th Avenue
Ocala, Florida 34474-5788 U.S.A.
Tel.: (724) 745-1555
Fax: (724) 745-6040

pneumaticproducts.com

PP_CHA/10-2023/CI

Request a Quote