

## Heat-Les™ Pressure-Swing Desiccant Dryers

DHA & CDA SERIES



Since 1946, the world has turned to SPX FLOW's 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.

Based in Charlotte, North Carolina, SPX FLOW is a leading global supplier of highly engineered flow components, process equipment and turn-key systems, along with the related aftermarket parts and services, into the food and beverage, power and energy and industrial end markets. SPX FLOW has more than \$2 billion in annual revenues and approximately 8,000 employees with operations in over 35 countries and sales in over 150 countries around the world. To learn more about SPX FLOW, please visit our website at [www.spxflow.com](http://www.spxflow.com)

## DHA & CDA Series Dryers

The DHA / CDA series dryer has been designed specifically to bring you reliable performance with unquestioned durability, even in hostile environments. Offering switching valves with at least a 5 year life means that you do not need to worry about maintenance or calibration – the DHA / CDA is truly a Fit and Forget solution to compressed air drying.

But more than this, the inclusion of the AMLOC Energy Management System means that savings in energy are significant enough to show rapid financial payback and therefore years of potential cost savings in the future.

### THE PNEUMATIC PRODUCTS GUARANTEE

Pneumatic Products guarantees that DHA / CDA Series dryers will produce the design dew point while operating continuously at maximum rated flow (100% duty cycle) at CAGI ADF 200 inlet standards of 100°F inlet temperature and 100% relative humidity at 100 psig.

### VERSATILE

#### Suitable for even hostile environments

Although based on detailed engineering and design, the DHA / CDA has been developed to ensure a level of simplicity which minimizes risk of breakdown, even in extreme atmospheres like corrosive, toxic or explosive environments.

The legendary downflow drying process takes advantage of 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) is achieved.

AVERAGE DEMAND	TYPICAL HEATLESS		DHA / CDA SERIES W/ AMLOC CONTROLS	ENERGY SAVINGS WITH DHA / CDA SERIES
	scfm	(cost of 15% purge)	(cost of purge)	
100%	1,200	\$ 23,526	\$23,526	-
85	1,020	23,526	19,997	\$ 3,529
70	840	23,526	16,486	7,058
50	600	23,526	11,763	11,763
35	420	23,526	8,234	15,292
20	240	23,526	4,705	18,821

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

# How it Works

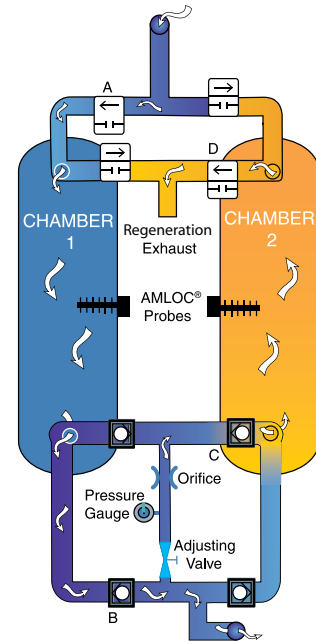
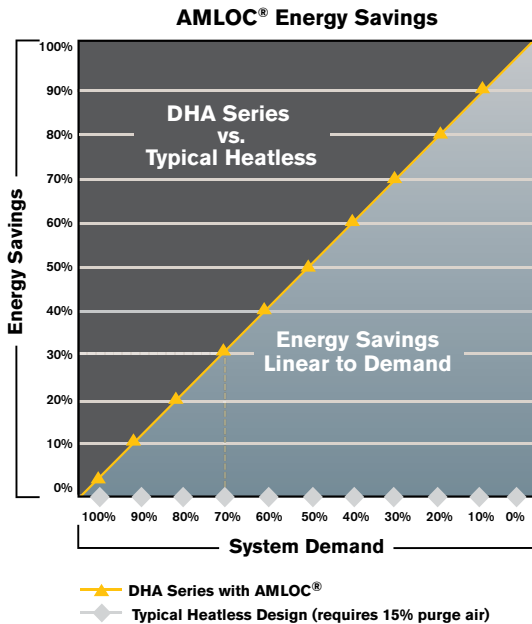
## AUTOMATED MOISTURE LOAD CONTROL (AMLOC®)

It is rare for a dryer to need to operate continuously at full load. To save energy (and therefore money) an AMLOC Energy Management System controls the dryer regeneration potentially resulting in thousands of dollars of energy savings each year.

The PTFE coated, stainless steel capacitance probes sense the dielectric strength imparted upon the desiccant by the extracted water vapor. Capable of identifying an aging or fouled bed, the regeneration cycles are managed with precision – even at -100°F. AMLOC reduces regeneration cycles to extend component life and ensures consistent dew points – without the need for maintenance or calibration.

## AMLOC IS BACKED BY A LIFETIME WARRANTY

This adds to your peace of mind and making this a true Fit & Forget solution. AMLOC® reduces regeneration frequency to extend component life and ensures consistent dew points.



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) where, abrasive desiccant dust is captured by an afterfilter. In regeneration mode, a side-stream of dried process air (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) where 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 this process with precision. The capacitance probes sense the dielectric strength water vapor imparts on the desiccant. Low moisture loads reduce regeneration frequency, while eliminating energy use. Serious performance, reliability and energy savings result as energy consumption mirrors plant air usage.

# Energy-Efficient Design

## DHA/CDA Series - The complete solution

Peace of mind, reliability, energy saving and environmentally friendly all in one package

- Energy saving
- Oil free
- Filtration as standard
- Ideal for remote, operator free use
- Fit & forget

## Filtration as Standard

Unlike many dryers, when you buy a DHA / CDA everything is included. Both oil and water vapor coalescing and particulate filtration are included in the package as standard. An automatic drain trap is included on the coalescing pre filter.



## 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



*\*Model Shown with Optional Features*

## Select Series Poppet Valve Sectional

**Expanding Piston Seal**  
Creates positive linear motion

**PTFE Coated Cylinder**  
Corrosion Resistant

**Seal Wear Indicator**

**Elastomer with Memory Forgiveness**  
Ensures bubble tight sealing

**Stainless Steel Internals**  
Corrosion Resistant

**Integral Wiper Seal**  
Removes particulate from sliding surfaces



## Engineered Performance

Non-lubricated Select Series Poppet Valves. The ULTIMATE in reliability.

## AMLOC® Energy Optimizer

Synoptic indication of process phases.

RS-485 Communications capable via PLC, computer or modem.

4 line X 80 character information center.



## Sensory Perception

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

# Exclusive Feature Details

## PROCESS QUALITY VALVES – ENGINEERED SIMPLICITY

If you have a compressor station in a remote location, the last thing you will want to do is to visit it due to a valve failure. Full port, air operated, Select Series poppet valves with stainless steel internals are exclusively used in the DHA / CDA series dryers. With life cycles expected to last in excess of 5 years, you can be assured of their quality; they won't let you down.

Protected against wear, a friction-free PTFE coating is applied to all wear surfaces. Corrosion resistant and non-lubricated, these valves withstand high temperatures and do not clog or erode due to abrasive desiccant dust. Unquestionably, these are the best valves for the job.



## 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.



## PPC FILTRATION

Critical applications and hostile environments demand premium grade products. Global industry leaders rely on PPC filters for their unmatched quality, durability and reliability in tough applications. PPC's 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 petrochemical installations are a few examples of the challenging environments that rely on PPC filters for lasting protection.



# Product Features List and Specifications

## AMLOC® Energy Mangement System

PTFE coated, stainless steel capacitance sensor	Standard
---	----------

## Desiccant:

Premium Grade Activated Alumina - Uniform Bead Size Prevents Clogging of Manifolds & Screens and Minimizes Bed Pressure Drop	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	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	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

## Filtration

Coalescing - Residual Oil Content of < 0.001 ppmw	Standard
Particulate - Absolute Micron Removal Below 0.9µm	Standard

## ENGINEERING DATA - DHA SERIES

MODEL	INLET FLOW @100 psig, -40°F	DIMENSIONS inches			INLET/OUTLET CONNECTIONS	APPROX. WEIGHT lbs.	FILTRATION
	scfm	H	W	D			
<b>60DHA</b>	60	57	38	30	3/4"	344	PPF-75
<b>110DHA</b>	110	75	38	30	1"	386	PPF-157
<b>130DHA</b>	130	61	38	32		489	PPF-157
<b>185DHA</b>	185	76	40	32	1-1/2"	595	PPF-257
<b>240DHA</b>	240	90	43	33		659	PPF-257
<b>270DHA</b>	270	88	43	33		685	PPF-360
<b>360DHA</b>	360	88	43	33		755	PPF-360
<b>505DHA</b>	505	90	50	34	2-1/2"	1,063	PPF-584
<b>630DHA</b>	630	91	53	34		1,407	PPF-775
<b>760DHA</b>	760	91	58	35		1,873	PPF-775
<b>900DHA</b>	900	106	73	45		2,022	PPF-1030
<b>1200DHA</b>	1,200	126	73	45	3" NPT	2,500	PPF-1200
<b>1600DHA</b>	1,600	119	69	72	4" ANSI FLG	3,200	PCC1800

## ENGINEERING DATA - CDA SERIES

MODEL	INLET FLOW @100 psig, -100°F	DIMENSIONS inches			INLET/OUTLET CONNECTIONS	APPROX. WEIGHT lbs.	FILTRATION
	scfm	H	W	D			
<b>30CDA</b>	31	57	38	30	3/8"	344	PPF-35
<b>60CDA</b>	57	75	38	30	3/4"	386	PPF-75
<b>70CDA</b>	68	61	38	32		489	PPF-75
<b>100CDA</b>	96	76	40	32		595	PPF-103
<b>125CDA</b>	125	90	43	33	1"	659	PPF-157
<b>140CDA</b>	140	88	43	33		685	PPF-157
<b>190CDA</b>	187	88	43	33	1-1/2"	755	PPF-257
<b>265CDA</b>	263	90	50	34		1,063	PPF-360
<b>330CDA</b>	328	91	53	34		1,407	PPF-360
<b>400CDA</b>	395	91	58	35	2"	1,873	PPF-401
<b>500CDA</b>	500	115	53	33	2-1/2"	1,780	PPF-584
<b>600CDA</b>	600	102	55	33		2,200	PPF-775
<b>750CDA</b>	750	113	55	33		2,500	PPF-775
<b>900CDA</b>	900	127	55	33		2,575	PPF-1030
<b>1200CDA</b>	1,200	119	58	33		3" NPT	2,750

1 Performance data per CAGI Standard ADF 200 for Dual-Stage 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, and 5 psi (0.35 bar) pressure drop.

\* Consult factory for larger models.



## Global locations

### USA

#### SPX FLOW

4647 SW 40th Avenue  
Ocala, Florida 34474-5788  
United States of America  
P: (352) 873-5793  
E: [ppc.americas@spxflow.com](mailto:ppc.americas@spxflow.com)

### CANADA

#### SPX FLOW

1415 California Avenue  
Brockville, Ontario K6V 7H7  
Canada  
P: 613-345-2280  
E: [ft.canada@spxflow.com](mailto:ft.canada@spxflow.com)

### APAC

#### SPX FLOW ASIA PACIFIC

2F, Treasury Building  
1568 Hua Shan Road  
Shanghai 20000523  
Peoples Republic of China  
P: +86 21 2208 5888

### EMEA

#### SPX FLOW ETTEN-LEUR BV

Munnikenheiweg 41  
4879NE Etten-Leur  
The Netherlands  
P: +31 (0)76 5085545  
E: [ppc.emea@spxflow.com](mailto:ppc.emea@spxflow.com)

### SPX FLOW INC.

4647 SW 40th Avenue  
Ocala, Florida 34474-5788 U.S.A.  
P: (352) 873-5793  
F: (352) 873-5770  
E: [ppc.americas@spxflow.com](mailto:ppc.americas@spxflow.com)  
[www.spxflow.com/pneumatic-products](http://www.spxflow.com/pneumatic-products)

SPX FLOW, Inc. reserves the right to incorporate our latest design and material changes without notice or obligation.

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. For more information visit [www.spxflow.com](http://www.spxflow.com).

The green ">" and "X" are trademarks of SPX FLOW, Inc.