



Compressed Air & Gas
Purification for Every Application



Heatless Regenerative Desiccant Dryer

AHLD E-Series



AHLD E-Series

70 - 5,000 SCFM

The Aircel AHLD E-Series is a fully automatic Dual Tower Heatless Regenerative Compressed Air Dryer with an integrated Energy Management Purge Reduction System. The PLC Controller provides complete reliable control of the system with text description of each step in the sequence of operation. The E-Series reliable operation and robust valving, requires no user adjustment and virtually no user maintenance. Our precision engineered components and design deliver outstanding service life and operational durability. Aircel has the experience, engineering and manufacturing capabilities to continuously develop dryers with the highest quality performance.

Delivering Energy Efficient & Purge Reduction Control

The **Aircel Programmable Controller (APC)** and **Energy Management System (EMS)** is standard on the AHLD. This energy-saving demand cycle reduces purge air and optimizes dryer performance by monitoring the moisture fast and early in the middle portion of the tower desiccant bed. This control panel automatically adjusts the regeneration cycle maintaining dew point and extending the drying cycle. Switching is less frequent, reducing dryer maintenance and fully utilizing desiccant capacity. This addition will improve reliability and performance while sustaining a constant dew point. The end result is an overall purge reduction and significant energy savings.

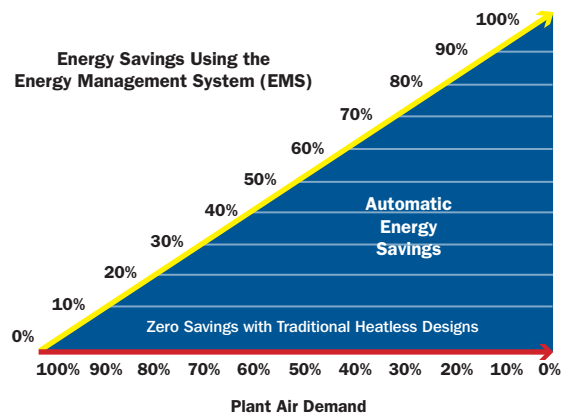


Advantages

- Accurate moisture sensing for precise dew point
- Heatless adsorption provides maximum purge air efficiency
- Immediate energy savings and efficient purge design
- Controller displays energy savings, cycle modes, dew point selection, service reminders and alarm conditions

Maximize your return-on-investment automatically with the AHLD E-Series.

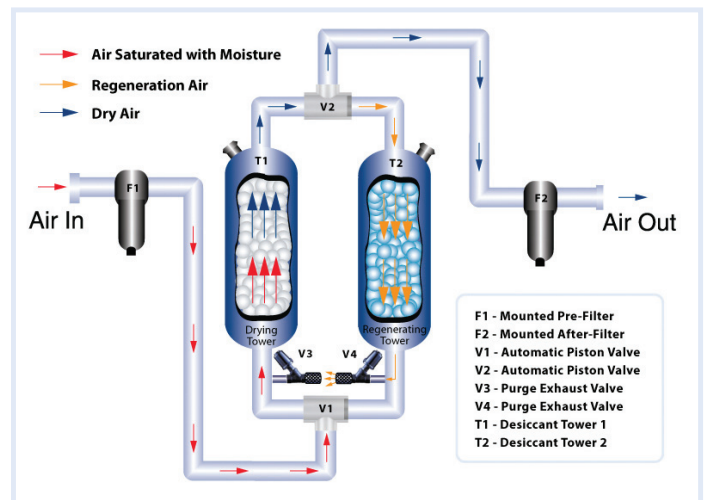
The Energy Management System delivers significant energy savings in direct relation to load variations from your air demands.



How It Works

Moisture saturated compressed air enters the coalescing pre filter (F1) where aerosols are coalesced then drained via an automatic drain system. The moist water vapor-laden inlet air free of liquid water flows to the inlet of the dryer through the APV (Automatic Piston Valve) (V1) which diverts the inlet air to one of the towers, in this example tower (T1). Air flows upward through the adsorbent bed removing the moisture vapor, the dried airflow exits the tower through the outlet APV valve (V2) flowing to the outlet particulate after filter (F2) which removes particulates from the air stream. Clean and dry air now flows to the process air distribution system.

Visit our website for a detailed description of the AHLD regeneration process under the products section.



AHLD E-Series

Standard Features & Benefits

Relief Valves
ASME UV stamped set @ 150 psi

Mounted Pre & After Filter
Optional Package with Zero Air-Loss Drain

LED Tower Operation
Indicates sequence of operation (drying & regenerating) for towers.

ASME Carbon Steel Vessels
a.) ≤ 750 scfm 200 psi @ 450°F
b.) ≥ 1000 scfm 150 psi @ 450°F

Purge Exhaust Mufflers
For low noise with built-in safety relief valve

Angle-Body Purge Exhaust Valve
Durable 10 year longevity

Rugged Steel Frame
Single complete package with floor stand

Tower Pressure Gauges
Large easy-to-read 3.5" display

Automatic Piston Valve (Inlet/Outlet)
Tough and reliable automatic shifting

Regulated & Filtered Pilot Air
Maintains constant stream of clean purified air

Desiccant Fill Port
Premium grade Activated Alumina (3/16") with high moisture capacity, made in the U.S.A.

Energy Management System (EMS)
Accurate moisture sensing providing consistent -40°F dew point by purging only when required

Aircel Programmable Controller (APC)
with Standard EMS for Energy Efficient Electronic Purge Reduction

- Power ON/OFF Switch/Light
- Savings Alarm
- Keypad Push Buttons
- 3" LCD Monochromatic Display
- UL/cUL-508a Control Assembly
- NEMA 4 Steel Enclosure
- Configurable PLC Control

Pilot Solenoid
Highly reliable and long-lasting

Desiccant Drain Port
For easy desiccant replacement

Automatic Piston Valve (Inlet/Outlet)
Durable Polyurethane seals with 10 year longevity

Model Example AHLD-100E

Additional Standard Features

- Remote start/stop control
- Fail-safe design: failure of power and/or pilot air causes the purge exhaust valves to close, uninterrupted drying
- Stainless steel desiccant supports and air diffusers to prevent channeling
- Counter-current regeneration, upflow drying, and downflow depressurization
- High performance butterfly valves (≥ 1000 scfm models)
- Easy installation with single point connection for electrical and inlet/outlet air
- Adjustable (5 & 10 min.) NEMA cycle
- Standard communication through RS-232/RS-485 combo port

Optional Structural Features

- All-pneumatic control package (no electricity required)
- Pre-piped filters and by-pass valve packages
- High inlet pressure up to 7000 psig
- -100°F pressure dew point
- NEMA 7

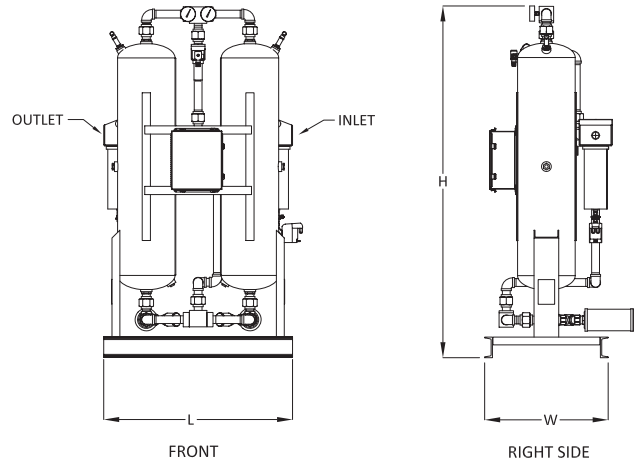
Optional Controller Features

- Failure-to-shift alarm
- High-inlet temperature alarm
- Dew point monitor
- Pressure alarm
- Visual moisture indicator
- Optional communications: Profibus-DP, AS-I, CANopen, DeviceNet, and Ethernet

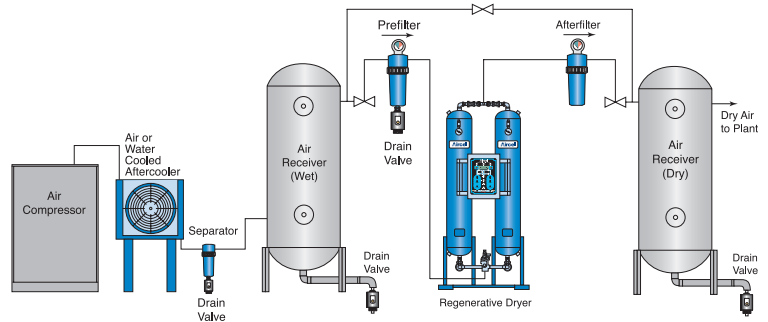
Model Comparison & Specifications

Model	Capacity ¹ (scfm)	Connection	Dimensions (in.)			Weight (lbs)
			H	L	W	
AHLD-70 E	70	3/4" NPT	73	26	22	410
AHLD-100 E	100	1" NPT	75	30	24	490
AHLD-150 E	150	1" NPT	75	30	24	560
AHLD-200 E	200	1-1/2" NPT	85	34	24	800
AHLD-250 E	250	1-1/2" NPT	85	34	24	870
AHLD-300 E	300	1-1/2" NPT	86	46	30	990
AHLD-350 E	350	2" NPT	87	46	30	1020
AHLD-450 E	450	2" NPT	87	46	30	1140
AHLD-500 E	500	2" NPT	89	50	30	1250
AHLD-600 E	600	2" NPT	89	50	30	1450
AHLD-750 E	750	2" NPT	90	50	30	1850
AHLD-1000 E	1000	3" FLG	94	66	40	2800
AHLD-1250 E	1250	3" FLG	98	70	40	4000
AHLD-1500 E	1500	3" FLG	99	70	40	4600
AHLD-2000 E	2000	4" FLG	109	93	50	5800
AHLD-2500 E	2500	4" FLG	115	112	60	6400
AHLD-3000 E	3000	4" FLG	120	118	70	7800
AHLD-3500 E	3500	6" FLG	125	120	70	9600
AHLD-4000 E	4000	6" FLG	128	120	75	10200
AHLD-4500 E	4500	6" FLG	130	130	80	10900
AHLD-5000 E	5000	6" FLG	135	130	80	11500

¹Capacity rated in accordance with CAGI ADF 200 @ 100 psig, 100°F Inlet, 100°F Ambient and a PDP of -40°F.
 Operating Pressure: 60-190 psig (models 70-750) and 60-140 psig (models 1000-5000).
 Ambient Air Temperature: 38°-105°F. Inlet Air Temperature: 40°F-100°F.
 Standard Power Supply: 115 VAC, consult factory for other options available.



Recommended Installation



Capacity Correction Factors

To Size the Dryer Capacity for Actual Conditions

$$\text{Adjusted Capacity} = \text{scfm} \times C1 \times C2$$

To calculate the capacity of a given dryer based on non-standard operating conditions, multiply the standard capacity by the appropriate correction factor(s).

EXAMPLE: Dryer Model: AHLD-100
 Standard Capacity: 100 scfm
 Actual Operating Conditions: 120 psig working pressure: C1 = 1.18
 100°F inlet temperature: C2 = 1.0
 Adjusted Capacity = 100 scfm x 1.18 x 1.0 = **118 scfm**

To Select the Dryer Model for Actual Conditions

$$\text{Adjusted Capacity} = \text{scfm}/C1/C2$$

To choose a dryer based on a given flow at non-standard operating conditions, divide the given flow by the appropriate correction factor(s).

EXAMPLE: Given Flow: 350 scfm
 Actual Operating Conditions: 120 psig working pressure: C1 = 1.18
 100°F inlet temperature: C2 = 1.0
 Adjusted Capacity = 350 scfm / 1.18 / 1.0 = **296.6 scfm**
 Selected Dryer Model: **AHLD-300**

The Compressed Air and Gas Institute (CAGI) has developed standards to protect users of compressed air & gas equipment. ADF200 the current standard for desiccant compressed air dryers, specifies the dryers performance to be rated at 100°F inlet temperature, 100°F

ambient temperature, and 100 psig system pressure. To adjust the dryer capacity from these "CAGI conditions" to your specific application, please use the correction factors below for differing system pressures (C1) and inlet air temperatures (C2).

Capacity correction factors for system air pressure (C1)

System Pressure (psig)	60	70	80	90	100	110	120	130	140	150
Correction Factor	0.65	0.73	0.82	0.91	1	1.09	1.18	1.27	1.35	1.44

*For inlet pressure above 150 psi (models 1000 +), consult factory

Capacity correction factors for inlet air temperature (C2)

Inlet Temperature (°F)	70	80	90	100	105*	110*	115*	120*
Correction Factor	1.2	1.15	1.10	1	0.9	0.8	0.7	0.6

*For inlet temperature above 100°F, molecular sieve desiccant is required



AIRCEL
 323 Crisp Circle
 Maryville, Tennessee 37801
 www.AircelDryers.com

PHONE
 (800) 767-4599
 Local: (865) 681-7066
 Fax: (865) 681-7069

SALES INFORMATION
 sales@airceldryers.com
REQUEST LITERATURE:
 litrequest@airceldryers.com

Due to a continuous program of product improvement, specification and dimensions are subject to change without notice.