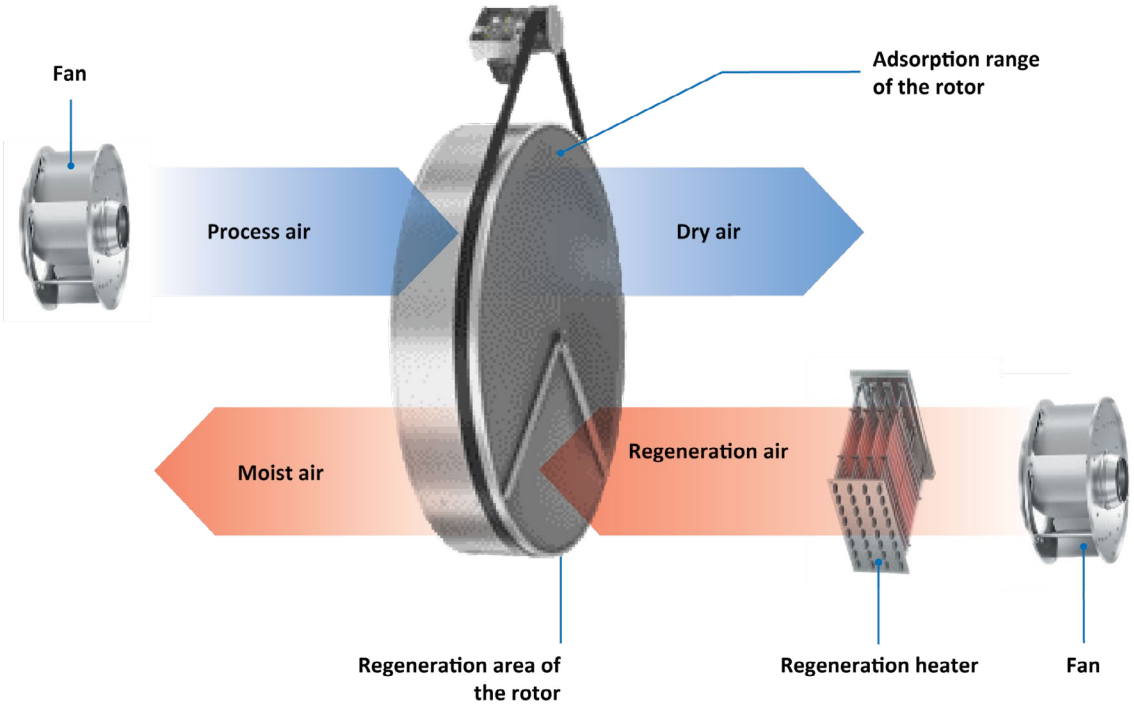
DA Desiccant Dehumidifier

Dehumidification and drying for industrial and commercial facilities

Humidification, Dehumidification and Evaporative Cooling

condair



Principles of Operation

Condair DA desiccant dehumidifiers are designed for environments where extremely low humidity is required. Standard models offer drying capacities from 7 to 44 lbs/h of moisture removal and airflows between 300 and 2400 CFM.

The standard models come equipped with extremely safe electric PTC heaters.

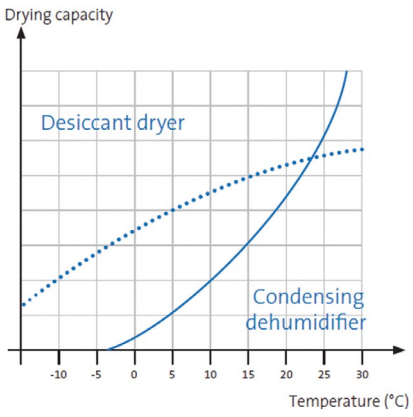
The desiccant rotor used in Condair desiccant dehumidifiers is non-flammable and silicone-free.

All our units are provided with insulated casing with double skin layout. The 1.25 in. mineral wool insulation helps reduce the risk of condensation, heat emission and radiated noise ensuring a more reliable and durable system.

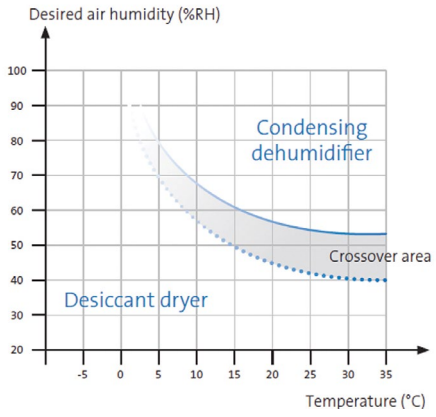
All standard units are UL approved. Standard models come ready to be fitted to pre and/or post cooling additions by others without obstructions.

Post-cooling is often necessary to reduce the heat given off by the air drying process.

Performance characteristics



Recommended usage by temperature/humidity



Double-wall housing

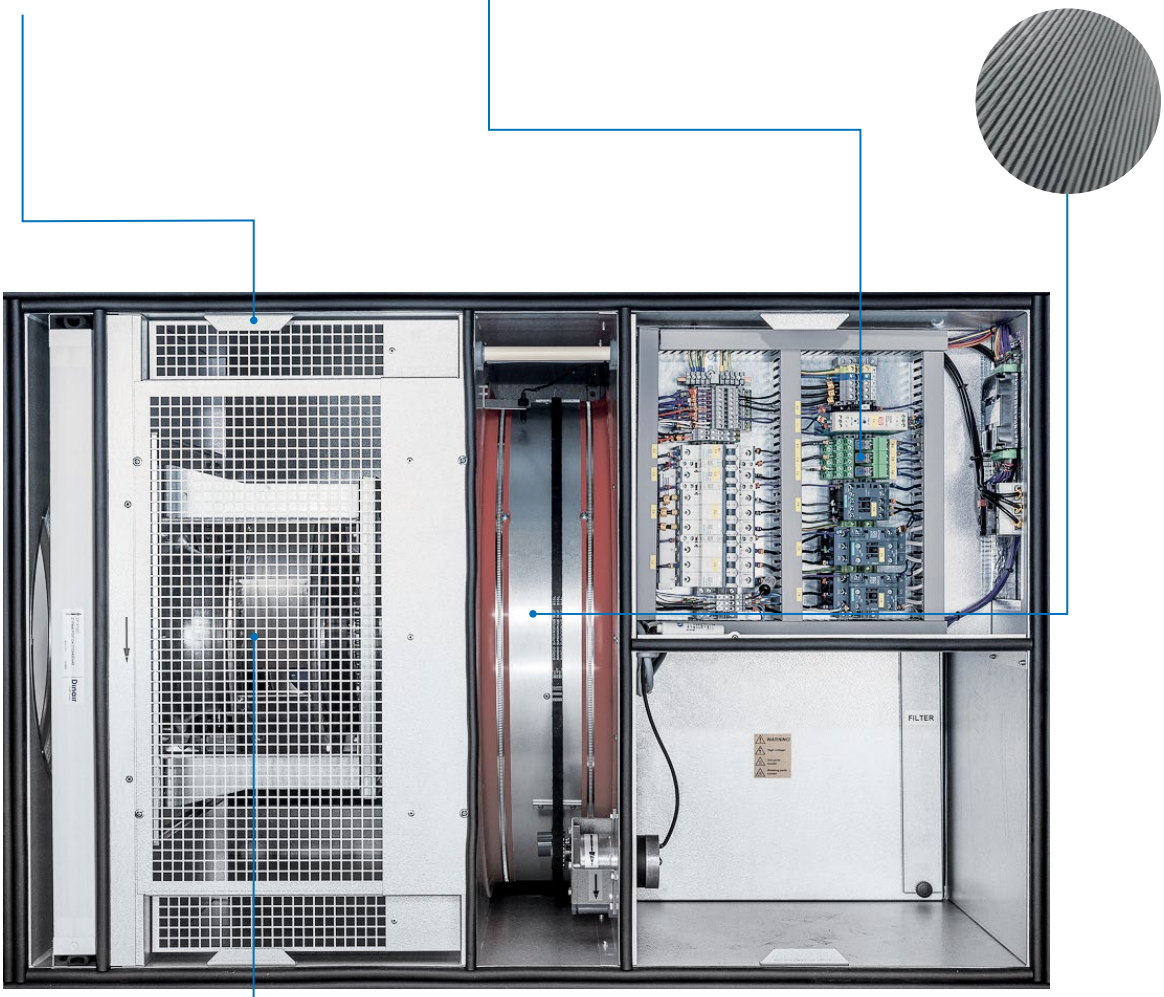
The DA features fully insulated double-wall housing made of corrosion-resistant Aluzinc® with powder coating as standard. The spaces between the housings are filled with at least 1.25in. of mineral wool as an insulation material. This ensures safe and efficient operation even at very low temperatures as well as maximum hygiene.

Comprehensive controller

Our adsorption dryers are equipped with an integrated touchscreen PLC for easy monitoring and configuration of machine operations, output and service needs.

Highly efficient desiccant rotor

The desiccant rotor consists of a honeycomb structure coated with an extremely hygroscopic silica gel. This structure creates an enormous internal surface for efficient moisture transmission. The rotor material is hygienic, non-flammable and non-respirable, and the rotors are largely maintenance-free.



Efficient fans

High-efficiency EC fans are configured in a push arrangement, directing regeneration air over the desiccant rotor under positive pressure. This prevents contact with hot, moist air and ensures reliable operation at very low humidity levels. Variable fan speed allows flexible control of process and regeneration airflow.

Regenerative heat sources

All adsorption dryers up to and including size DA 2400N have electrical PTC heating elements for the regeneration process. The self-regulating properties of the PTC heating elements provide protection against fusing and thermostat interruptions.

Service-friendly construction

All of the components are designed to be easy to remove and maintain. The filter inserts can be replaced easily. Construction with a vertically arranged rotor enables a low overall height. The optimum load distribution of the installed components ensures a long service life and high operational reliability.

Why Use a Dehumidifier

In industrial and commercial environments—including manufacturing, warehousing, and indoor pools—controlling air humidity is often critical to maintaining operations, protecting assets, and ensuring safety.

Ensuring Product Quality

Precise humidity control is essential for consistent product quality. Dehumidifiers help maintain stable process conditions and prevent defects caused by excess moisture.

Preventing Downtime

Dehumidification protects equipment, pipework, and materials from moisture damage, reducing unplanned downtime and costly repairs.

Operational Safety and Hygiene

Reducing condensation on floors and surfaces lowers slip hazards and limits conditions that promote bacterial growth.

Protecting Building Structures

Controlling humidity reduces vapor migration through building materials, helping prevent long-term structural deterioration and costly renovations.

Protecting Idle Equipment

Dehumidification prevents corrosion on equipment that is taken out of service, keeping it ready for use when needed.

Protecting Stored Assets

In warehouses and archives, dehumidifiers prevent moisture damage that can degrade or destroy valuable goods and materials.

Find Perfect Balance with Humidification & Dehumidification

Combining humidification and dehumidification allows for precise, year-round control of indoor air conditions, even in environments with highly variable loads. By integrating both technologies into a coordinated system, humidity levels can be maintained within tight tolerances regardless of seasonal changes, process demands, or outdoor conditions.

These systems can be configured to respond dynamically—adding or removing moisture as needed—to ensure consistent performance, protect sensitive materials and equipment, and support stable production processes. The result is a flexible, reliable solution that delivers optimal conditions across a wide range of applications.

Industry Applications

Clean Rooms

Clean rooms require stable humidity and temperature to prevent contamination and protect sensitive processes. With 100% fresh, filtered air, desiccant dehumidifiers provide precise control (±5% RH) and stable conditions, typically 30–50% RH below 70°F, ensuring product integrity.

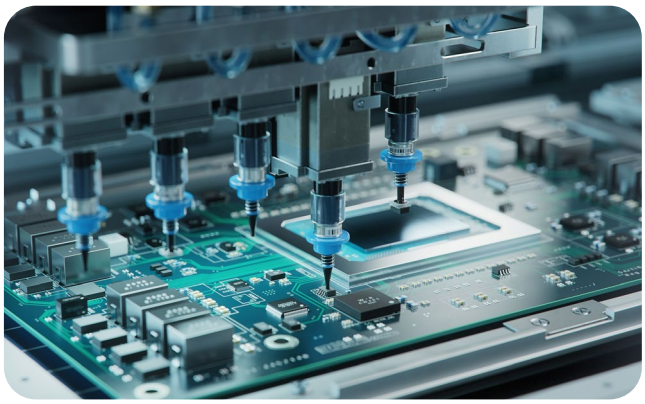
Indoor Ice Rinks

Indoor ice rinks require tight humidity control to prevent fog, condensation, and ice quality issues. Excess moisture leads to poor visibility, surface degradation, and corrosion. Desiccant dehumidifiers maintain low humidity levels, improving ice conditions, and reducing maintenance.

Storage & Cold Storage

During loading cycles, excess moisture can accumulate from outside air and stored goods. At low temperatures, condensation then forms as water or ice on surfaces, creating safety hazards and damaging stored products.

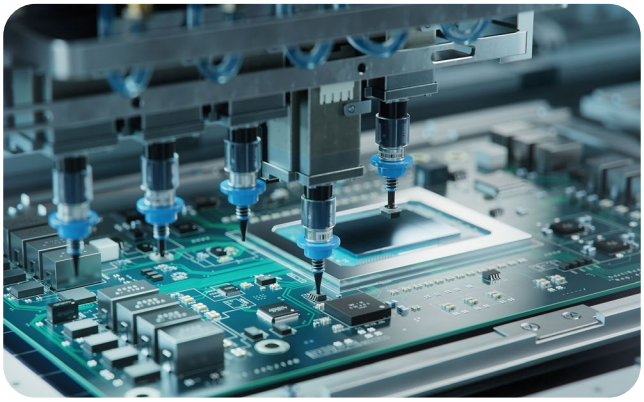
Traditional cooling systems used in cold storage offer limited dehumidification and can ice over, requiring defrost cycles and increasing energy use. Desiccant dehumidifiers provide continuous moisture removal, ensuring stable conditions and protecting stored goods.



Food Processing

Food production requires strict humidity control to prevent spoilage, clumping, and downtime. Desiccant dehumidifiers maintain stable conditions using adsorption (not condensation), reducing mold and bacteria risk. Typical control accuracy of ±5% RH supports consistent product quality and efficient operation.

Industry Applications Continued



Electronics

Electronic components are highly sensitive to moisture. Above 50% RH, oxidation and material degradation increase. Storage conditions typically require 2–10% RH at 55–66°F. Desiccant systems provide low humidity control (±5% RH) to protect performance and reliability.

Pharmaceuticals

Pharmaceutical products are highly hygroscopic, making precise humidity control critical—especially in OSD production. Desiccant systems maintain stable conditions (±5% RH) to support product efficacy, regulatory compliance, and controlled manufacturing environments.

Aerospace & Defense Storage

Humidity above 50% RH significantly increases corrosion risk. Maintaining 30–50% RH protects equipment and ensures readiness. Desiccant systems operate effectively in unheated spaces and can achieve <10% RH with ±5% control accuracy.

Museums & Archival Storage

Humidity control is essential to preserve sensitive materials. Organic items typically require 35–60% RH, while metals may require below 20% RH. Desiccant systems operate across wide conditions, including low temperatures, and can achieve <10% RH with ±5% accuracy.

Technical Specifications

Technical data		DA 300N	DA 400N	DA 600N	DA 800N	DA 1400N	DA 2000N	DA 2400N
Drying capacity at 68°F – 60% RH	lbs/h	7.3	11.2	15.6	22	29.7	31.9	44.1
Nominal process air volume	CFM	294	412	589	824	1413	2001	2354
Nominal regeneration air volume	CFM	88	129	206	235	294	323	500
Ext. compression — process air	in. H20	1.2	0.8	1.2	0.8	1.2	1.2	0.8
Ext. compression — regeneration air	in. H20	1.2	1.0	0.8	1.2	1	0.8	0.8
Regeneration heater power	kW	4	7	10.2	13	17	18	23
Electrical connected load	208V	5.8	8.8	11.9	14.8	21.6	22.1	n/a
	480V	7.9	9.6	12.9	15.6	20	23.4	31.4
Voltage supply	V/Ph/Hz	208/3/60 or 480/3/60						480/3/60
Process air connection diameter	in (mm)	15.7 (400)						
Dry air connection diameter	in (mm)	12.4 (315)						
Humid/regeneration air connection diameter	in (mm)	7.9 (200)						
Dimensions (H x W x D)	in (mm)	36 x 48 x 39 (910 x 1199 x 991)						
Sound pressure levels 1)	dB	62	62	62	63	68	69	69
Weight	lbs	408	419	419	430	441	441	452

1) Maximum sound pressure level at 3.3ft, distance, with 10 ft. applied ducting

Planning & Service

Dehumidification applications vary widely, making proper system selection critical. Engaging a specialist during the design phase ensures the system is correctly sized and suited to the application.

Condair provides expert support for planning, sizing, and selecting the right solution for your project. Our team also offers fast, nationwide service for both industrial and commercial systems, including maintenance and commissioning.

Condair services include:

- Planning support
- On-site consultation
- Software-assisted sizing and calculations
- Nationwide service and support
- Spare parts availability

About Condair

Condair Group, founded in 1948 and based in Switzerland, is the global leader in humidification, dehumidification and evaporative cooling. Supported by science, we engineer individual, holistic solutions that customers can trust through the entire lifecycle. With optimal humidity, we increase productivity and create healthier built environments.

Condair Group has production sites in Europe, North America and China, its own sales and service organizations in 22 countries, and representatives in 50 locations worldwide. You can rely on our comprehensive portfolio of innovative technologies for air humidification, dehumidification and evaporative cooling for the entire lifecycle of each product.

Talk to a Humidity Control Expert

Get expert guidance from a local representative on system selection, sizing, and integration. **Find your local Condair representative here:**

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