PURE PERFORMANCE

Dehumidification and drying for industrial and commercial companies

condair

Why use a dehumidifier?

Particularly in the industrial and commercial sectors, swimming pool and warehousing industries, operators are often confronted with a pressing need to control the humidity of the air.

Ensuring product quality
Being able to precisely control air humidity throughout production processes is an essential factor in ensuring product quality remains consistently high. Using air dehumidifiers and dryers helps to ensure that these processes remain safe and stable.

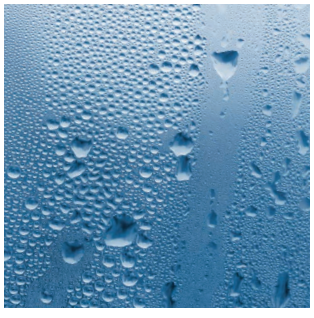
Maintaining operations and preventing downtime
Dehumidifiers can protect pipework, installations, operating materials and technical appliances from moisture damage. This ensures a high level of operational readiness. High costs due to moisture-related remediation work and loss of production are avoided.

Protecting valuables in storage and archives
In the archive and warehouse sector, dehumidifiers help to protect valuable items from moisture damage, which can, in extreme cases, lead to total destruction.

Conservation of out of service machinery
Machines and equipment that are taken out of service periodically can be protected from corrosion damage with air dehumidifiers. This keeps them in peak condition to ensure that they can be put back into service more quickly when the time comes.

Protecting building structures
Air dehumidifiers can be used to prevent/minimize water vapor diffusion through building structures, and so protect them from deterioration over the long term. High follow-up costs for building renovation are thus prevented.

Operational safety and hygiene
Condensate formation on walkways can lead to an increased risk of accidents and encourage bacterial growth. Air dehumidifiers help to maintain safe and hygienic conditions.



Preventing condensation

Prevention of icing

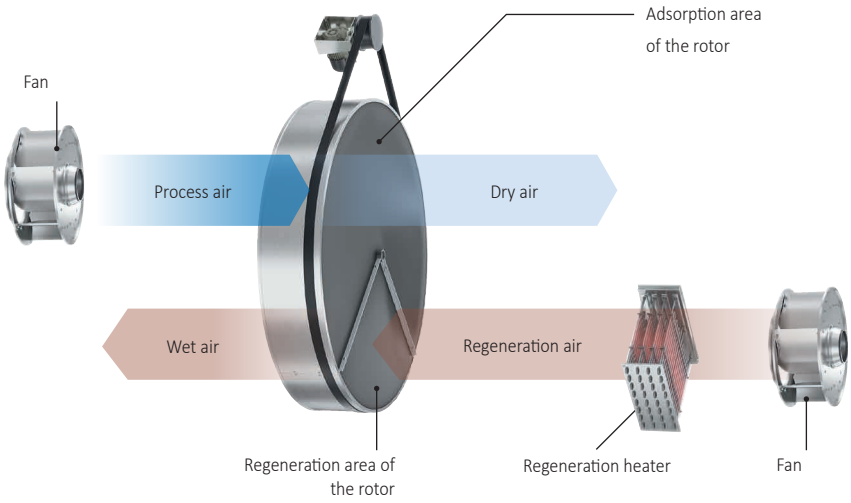
Protection from rust and corrosion

Preventing mold and rot

Ensuring product quality

Preventing clumping

Desiccant drying — functional principle



Condair DA series

Condair DA desiccant dryers are designed to be used wherever extremely low humidity is needed, such as in industrial drying processes, or where there are very low temperatures to deal with.

The powerful sorption rotors enable the safe operation of the units down to temperatures of-30°C as well as bringing humidity values down to a minimum.

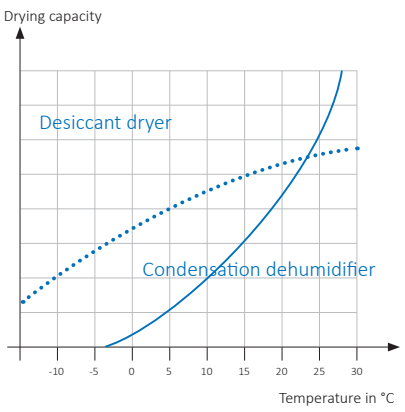
As well as standard designs with drying capacities of 0.6–182 kg/h, a wide range of specialized versions are also available.

Depending on the size, the dehumidifier can be equipped with pre-cooling and/or post-cooling coils, heat exchanger or air-cooled condensation module at the factory. In particular, post-cooling is often required due to the heat generated during the drying process and should be taken into account early in system planning. In addition to choosing different regeneration methods, it is also possible to combine existing on-site media such as steam or hot water with the electric regeneration heater.

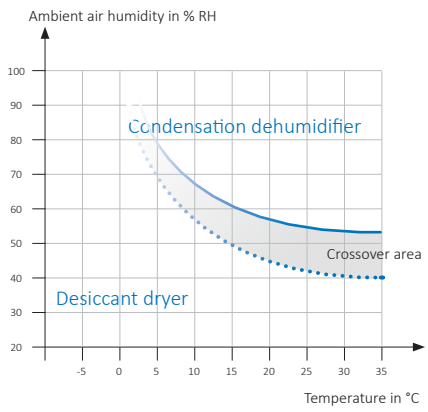
This results in significant energy savings, especially in larger systems, and therefore leads to a substantial reduction in operating costs.

The sorption rotor used in Condair desiccant dryers is silicone-free. The drying agent is neither respirable nor flammable.

Performance characteristics



Recommended application range based on temperature/humidity



Double-wall housing

From size DA 500, all appliances have a fully insulated, double-walled housing made of corrosion-resistant Magnelis® with powder coating as standard. The gaps are insulated with at least 30 mm mineral wool for quiet, efficient operation even at low temperatures and the highest hygiene standards. The housing is optionally available in AISI 304 stainless steel. The DA 500-4000 appliances are also available in a Compact version without insulation.

Different control options

From size DA 500, all appliances are equipped with a PLC with touch display as standard. Various control variants are possible depending on customer requirements. The PLC controls the humidity, optionally also the temperature, and allows network integration via Modbus or BACnet. It also monitors the internal components and issues service instructions or alarms as required.

Highly efficient desiccant rotor

The desiccant rotor consists of a glass fibre structure which is coated with an extremely hygroscopic silica gel. This honeycomb 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

Only high-quality, directly driven EC-brand fans are used. The fans are designed in push configuration. Here the air for the regeneration and process air is led over the rotor with positive pressure.
This enables trouble-free use even at very low humidity levels, because the regeneration fan does not come into contact with hot wet air.

Regenerative heat sources

All desiccant dryers up to and including size DA 4000 have electrical PTC heating elements for the regeneration process. The self-regulating properties of the PTC heating elements provide protection against melting and thermostat cut outs. Alternatively, the desiccant dryer can also be equipped with a hot water or steam coil or, for larger air volumes, with a gas burner.

Sophisticated construction

All of the components are designed to be easy to remove and maintain. The air filters 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.

Technical Data
DA **DESICCANT DRYER**

DA 160

DA 450

Technical Data		DA 160	DA 250	DA 440
Drying capacity at 20°C – 60% RH	kg/h	0.6	1.1	1.4
Nominal process air volume	m^3/h	160	250	440
Nominal regeneration air volume	m^3/h	40	50	100
Electrical connected load	kW	1	1.3	2.1
Current consumption	A	4.3	5.65	9.1
Temperature/humidity operating range	°C / % RH	0 to +40 / 0 to 100		
Voltage supply	V/Ph/Hz	230/1/50		
Air intake area	mm	145 x 155	145 x 255	
Dry air connection diameter	mm	100	125	
Damp air connection diameter	mm	63	80	
Dimensions (H x W x D)	mm	273 x 322 x 329	351 x 335 x 357	
Sound pressure levels [1)]	dB(A)	53	52.9	69
Weight	kg	10.5	14	14

Technical Data		DA 210	DA 400	DA 450
Drying capacity at 20°C – 60% RH	kg/h	0.6	1.5	2.2
Nominal process air volume	m^3/h	210	400	450
Nominal regeneration air volume	m^3/h	40	120	120
Electrical connected load	kW	1.1	2.3	3.5
Current consumption	A	4.8	10	15.2
Temperature/humidity operating range	°C / % RH	0 to +40 / 0 to 100		
Voltage supply	V/Ph/Hz	230/1/50		
Process air connection diameter	mm	125	160	
Dry air connection diameter	mm	100	160	
Humid / regeneration air connection diameter	mm	80	80	
Dimensions (H x W x D)	mm	351 x 335 x 357	525.5 x 504 x 428	
Sound pressure levels [1)]	dB(A)	53.0	62.1	
Weight	kg	15.3	28	31

1) At temperatures below 0 °C, modifications may be required depending on the installation conditions. Please contact your Condair representative.
2) Deviating voltages and frequencies available on request.
3) Classification according to DIN ISO 16890
4) Laboratory values. Sound pressure level measured at a distance of 1 m from the machine surface, with 3 m of connected air duct. Actual values may vary.
5) Laboratory values. Sound pressure level measured at a distance of 2 m from the machine surface, with 3 m of connected air duct. Actual values may vary.

Technical Data
DA **DESICCANT DRYER**

DA 500-4000 Standard

DA 12000

Technical data		DA 500	DA 700	DA 1000	DA 1400	DA 2400	DA 3400	DA 4000
Drying capacity at 20 °C - 60% r.H.	kg/h	3.3	5.1	7.1	10	13.5	14.5	20
Nominal process air flow	m^3/h	500	700	1000	1400	2400	3400	4000
Nominal regeneration air flow	m^3/h	150	220	350	400	500	550	850
Nominal ext. pressure process- / regeneration air	Pa	300 / 300	200 / 250	300 / 200	200 / 300	300 / 250	300 / 200	200 / 200
Electrical connected load	kW	4.5	7.5	11	13.6	19	20.6	30.4
Electrical load regeneration heater	kW	4	7	10.2	13	17.5	18	26
Operation range - Temperature [1] / Humidity	°C / % r. H.	0 - 40 / 0 - 100						
Power supply [2]	V/Ph/Hz	400/3/50						
Connection dimensions process- / dry air	mm	Ø400 / Ø315						
Connection diameter regeneration air	mm	Ø200						
Filter class process- and & reactivation air [3]		Coarse 65 %						
Standard sound pressure level [4]	dB(A)	62	62	62	63	68	69	69
Dimensions (H x B x T) Standard Case	mm	910 x 1199 x 992						
Weight Standard Case	kg	185	190	190	195	200	200	205
Dimensions (H x B x T) Compact Case	mm	886 x 1145 x 941						
Weight Compact Case	kg	120	125	125	130	135	135	140

Technical data		DA 4400	DA 6400	DA 7400	DA 9400	DA 12000
Drying capacity at 20 °C - 60% r.H.	kg/h	28	36.5	45	54	63
Nominal process air flow	m^3/h	4400	6400	7400	9400	12000
Nominal regeneration air flow	m^3/h	1200	1600	2250	2500	2500
Nominal ext. pressure process air	Pa	500	200	600	200	200
Nominal ext. pressure regeneration air	Pa	300	200	300	300	300
Electrical connected load	kW	41	53	66.7	78	94.2
Electrical load regeneration heater	kW	36	48	60	72	84
Operation range - Temperature [1] / Humidity	°C / % r.H.	0 - 40 / 0 - 100				
Power supply [2]	V/Ph/Hz	400/3/50				
Connection dimensions process air- / dry air	mm	Ø630 / Ø500				H x B 1100 x 700 / H x B 800 x 500
Connection diameter regeneration air	mm	Ø315				
Filter class process - & regeneration air [3]		Coarse 65 %				
Dimensions (H x W x D)	mm	1311 x 2326 x 1297				1311 x 2263 x 1297
Sound pressure level [5]	dB(A)	72				
Weight		520	520	550	550	550

Technical Data
DESICCANT DRYER **DA FREEZER**

DA FREEZER

Technical Data		DA 500 - 4000 Freezer
Nominal process air volume	m^3/h	500 to 4000
Nominal regeneration air volume	m^3/h	150 to 550
Power supply	V/Ph/Hz	400/3/50
Connection diameter process air	mm	400
Connection diameter dry air	mm	315
Connection diameter regeneration air	mm	200
Dimensions (H x W x D)	mm	1067 x 1339 x 1128
Weight	kg	205 - 225

Fully insulated desiccant dryer for installation outside the freezer area

With the Freezer version, Condair offers a special design of the unit sizes DA 500 - 4000 specially designed for use in the deep-freeze sector. In addition to the components of a standard desiccant dryer described above, this series of units is equipped with, among other things, a 100 mm thick insulated housing made of stainless steel AISI 304 stainless steel.

This special design allows for installation outside of the actual deep-freeze area, where the installation of the dryer often conflicts with the storage space. By installing the dryer outside of the actual deep-freeze area, valuable storage and functional areas remain free.

In deep-freeze warehouses with interior temperatures well below 0 °C, moisture problems quickly become visible and inevitably lead to significant operational disruptions. Inflowing warm and humid air condenses and freezes on floors, ceilings, and walls, forming ice. Large and heavy ice formations tend to build up especially on the evaporators of the refrigeration system and in the airlock area.
To maintain system efficiency and operational safety, these must then be removed manually at great expense. These problems are prevented by consistently drying the room air in the cold store with an desiccant dryer.

The desiccant dryer continuously extracts return air from the cold storage area, dehumidifies it below the required dry dew point, and reintroduces the dried air back into the cold storage area. Ideally, the reintroduction of the dried air occurs directly at the air coolers or in the infiltration area.
The Condair DA Freezer units are particularly well-suited for deployment in testing facilities, where measurements and simulations take place within a temperature range of -20°C to +35°C. Given the significant temperature range, a challenge arises wherein, without additional preheating of the extremely cold process air from the test chamber, frost can accumulate on the unit's casing, electrical components,

and the regeneration section of the adsorption dryer. This leads to impaired dryer functionality and consequently affects the entire testing facility's operation sooner or later.
Thanks to their specifically designed construction tailored to such application scenarios, the desiccant dryers within the Condair DA Freezer series ensure reliable and efficient drying of even extremely cold process air. Importantly, this is accomplished without necessitating an additional, elaborate, and costly preheater.

The Condair DA Freezer units have been developed and continuously optimized over many years with the aforementioned applications in mind. By completely eliminating critical thermal bridges on the casing and precisely coordinating highly sensitive components such as fans, the rotor, and heating elements, maximum efficiency and operational safety of the system are ensured.

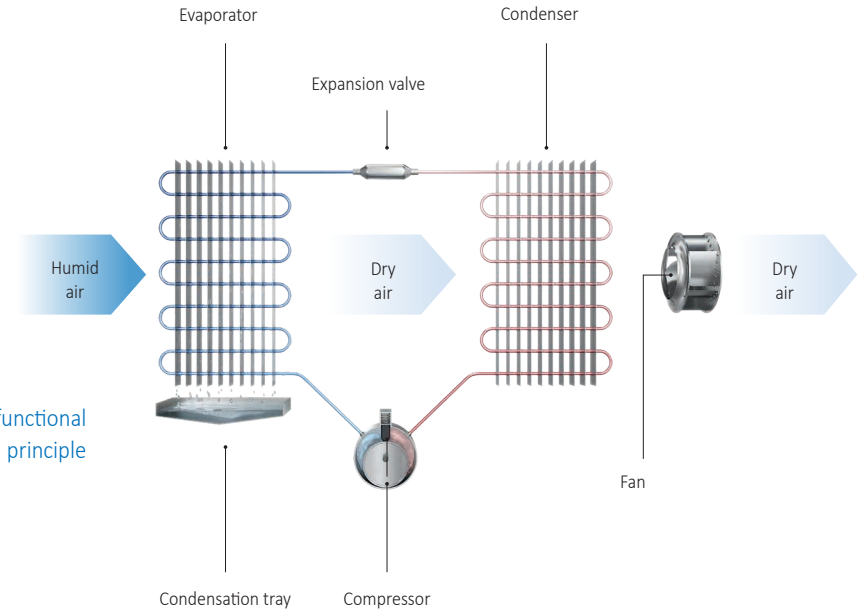
Therefore, considering cost-effectiveness both in terms of procurement and operation, the Condair DA Freezer adsorption dryers represent the optimal solution for use in cold storage, testing facilities, and applications with a similar set of requirements.

Technical Data
DA **DESICCANT DRYER**


DA 27000 SP

Technical Data		DA 13000SP	DA 19000SP	DA 27000SP
Drying capacity at 20°C – 60% RH	kg/h	86	111	182
Nominal process air flow	m^3/h	13000	19000	27900
Nominal regeneration air flow	m^3/h	4200	5400	6980
External pressure process air	Pa	300	300	400
External pressure regeneration air	Pa	300	300	250
Electrical connected load	kW	143.6	183.3	309
Electrical load regeneration heater	kW	132	168	288
Operation range - temperature [1]	°C	0 - 40		
Operation range - humidity	%rH	0 - 100		
Power supply [2]	V/Ph/Hz	400/3/50		
Connection dimensions process air	mm	Ø800		Ø1000
Connection dimensions dry air	mm	Ø800		Ø1000
Connection diameter regeneration air	mm	Ø500		Ø630
Connection diameter wet air	mm	Ø500		Ø630
Filter class process air [3]		coarse 70%		
Filter class regeneration air [3]		coarse 70%		
Dimensions (H x W x D)	mm	2300 x 2365 x 2000		2500 x 2900 x 2400
Sound pressure level [4]	dB(A)	73	73	-
Weight	kg	1,350	1,700	2,400

1) At temperatures below 0 °C, modifications may be required depending on the installation conditions. Please contact your Condair representative.
2) Deviating voltages and frequencies available on request.
3) Classification according to DIN ISO 16890
4) Laboratory values. Sound pressure level measured at a distance of 2 m from the machine surface, with 3 m of connected air duct. Actual values may vary.



Condensation dehumidification — functional principle

Condair DC series

Condair industrial dehumidifiers have many different applications across the industrial, commercial and warehousing sectors. They are based around a refrigerant circuit system, and are generally used in areas which require a relative humidity as low as 45% rH.
Condair industrial dehumidifiers can be configured in a variety of ways and to suit our customers' individual needs. So we always have the optimum dehumidifier for any application.

The standard units in the Condair DC series cover a broad range of applications. They have dehumidification capacities from 75 l / 24 h up to 930 l / 24 h.
Due to their enormous air capacities up to 8,500 m^3 / h, even the humidity in very large buildings can be regulated with only one, or just a few, units. They can be free-standing or configured for mobile use, and can even be connected to the air duct network to ensure optimum distribution of the dehumidified air.

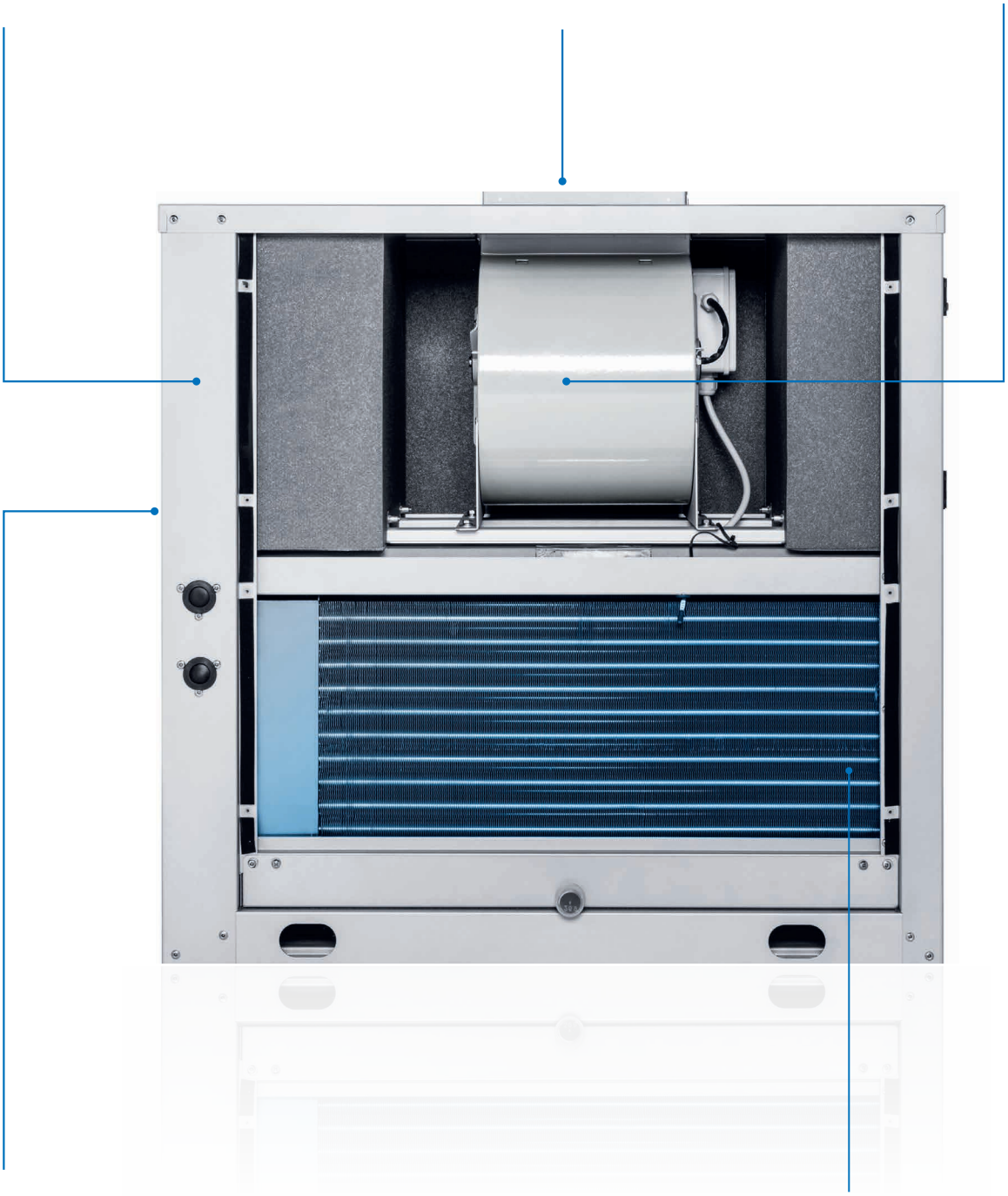
For temperature-sensitive areas, we offer special temperature-neutral versions. The condensation heat of the dehumidifiers is discharged through an external condenser, so that strong fluctuations in room temperature can be avoided due to the operation of the dehumidifier.

Condair DC industrial dehumidifiers are equipped with hot gas defrosting as standard, which ensures safe and economical operation even at low room temperatures.

Durable housing
The robust, hot-dip galvanized RAL 9006 housing provides maximum protection against the aggressive environmental conditions often experienced in the industrial sector. The housing is easy to disassemble to ensure fast access to all of the relevant components. A stainless steel version is also available.

Flexible connection options
Condair DC dehumidifiers can be operated independently or connected to a ventilation duct network. Separate connection frames are available for this. For longer duct networks and specialist applications, we offer more powerful EC fans with higher static pressure.

Fan
High-quality, directly controlled AC or EC fan. The fan operates energy-efficient and quiet. Various static pressures can be set on the dehumidifier. The fan housing is sound-insulated and completely separated from the refrigeration circuit.



Controller
The control of the dehumidifier is fully electronic and managed by a microprocessor. Operation and error notifications are displayed on the integrated display, which can also show operating hours. The microprocessor controls important functions such as defrosting and compressor operation. A a volt-free contact is provided for issuing fault indication.

Cooling circuit
Highly efficient refrigeration circuit using R410A refrigerant. The refrigeration circuit incorporates only well-known brand components. Pressure equalization is achieved through thermostatic expansion valves. All components are easily accessible after removing the appropriate covers.

Heat exchangers
The heat exchangers already have a hydrophilic coating in the standard version ex works. Special coatings are available on request for operation under polluted room air conditions.

Technical Data

Condensation dehumidifier **DC**

DC 200

Technical Data		DC 75	DC 100	DC 150	DC 200
Dehumidification capacity at 30°C – 80% RH	l/24h	78.5	109.2	133.9	175.9
Dehumidification capacity at 20°C – 60% RH	l/24h	35.4	49.1	73	91.2
Dehumidification capacity at 10°C – 70% RH	l/24h	25.3	35.2	55.2	68.3
Air circulation	m^3/h	800	1000	1500	1800
Nominal power consumption [1]	kW	1.4	1.8	2.2	2.8
Maximum current consumption [2]	A	7.9	9.6	13	16.7
Available static pressure (higher pressure optional)	Pa	50 - 150			
Operating range — humidity	% RH	40 - 99			
Operating range — temperature	°C	5 - 36			
Voltage supply	V/Ph/Hz	230/1/50			
Sound pressure levels [3]	dB(A)	45	47	52	54
Refrigerant / fill volume	Type/g	R410A / 550		R410A / 1100	
Total of CO_2 equivalent [4]	t-CO_2 e	1.15	1.15	2.30	2.30
Dimensions (H x W x D)	mm	800 x 819 x 400		981 x 1055 x 554	
Weight	kg	85	90	130	135

Technical Data		DC 270	DC 350	DC 450	DC 550	DC 750	DC 950
Dehumidification capacity at 30°C – 80% RH	l/24h	254.2	379.8	469.2	590.9	845.9	1028
Dehumidification capacity at 20°C – 60% RH	l/24h	113.2	170.6	222.6	270.5	386.5	508.2
Dehumidification capacity at 10°C – 70% RH	l/24h	87.9	130.8	164.6	202.2	300.4	388.1
Air circulation	m^3/h	3500	4200		5500	7000	8500
Nominal power consumption [1]	kW	4.1	5.2	8.1	9.1	14.3	18.1
Maximum current consumption [2]	A	10.8	13	17.1	18.3	28.6	35.2
Available static pressure (higher pressure optional)	Pa	50 - 150					
Operating range — humidity	% RH	40 - 99					
Operational range — temperature	°C	5 - 36					
Voltage supply	V/Ph/Hz	400/3/50					
Sound pressure levels [3]	dB(A)	54	55	55	56	56	56
Refrigerant / fill volume	Type/g	R410A/3000	R410A/2500		R410A/9000	R410A/8000	R410A/8000
Total of CO_2 equivalent [4]	t-CO_2 e	6.26	5.22	5.22	18.79	16.7	16.7
Internal unit dimensions (H x W x D)	mm	1378 x 1154 x 704			1750 x 1504 x 854		
Weight	kg	207	211	215	415	423	430

1) at t_R = 30°C; humidity = 80% RH
2) full load current; FLA = full load amperage
3) Sound pressure level Laboratory value at 1 m distance (free field, ISO 9614), fan: static pressure 50 Pa. Values at the installation site may deviate.
4) R410A global warming potential (GWP) = 2,088 CO_2e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For wall mounting
Condair **DC-W**

Technical Data		DC 50W	DC 75W	DC 100W	DC 150W	DC 200W
Dehumidification capacity at 30°C – 80%	l/24h	58.4	80.2	108.6	157.1	210.8
Dehumidification capacity at 20°C – 60%	l/24h	25.3	36.2	49.4	69.7	95
Dehumidification capacity at 10°C – 70%	l/24h	17.3	26.6	33.7	44.3	60.9
Air circulation	m^3/h	500	800	1000	1400	1650
Compression available	Pa	40				
Nominal power consumption [1]	kW	0.7	1.2	1.6	1.9	2.5
Maximum current consumption [2]	A	4.0	6.8	7.8	12.1	15.7
Temperature/humidity operating range	C°/ % RH	5 - 36°C / 40 - 99% RH				
Voltage supply	V/Ph/Hz	230/1/50				
Sound pressure levels [3]	dB(A)	40	43	43	45	47
Refrigerant / fill volume	Type/g	R410A / 470	R410A / 600	R410A / 700	R410A / 1200	
Total of CO_2 equivalent [4]	t-CO_2 e	0.98	1.25	1.46	2.51	
Dimensions (H x W x D)	mm	750 x 835 x 260	751 x 1134 x 260		840 x 1384 x 310	
Weight	kg	61	75	78	115	115

For rear wall mounting
Condair **DC-R**

Technical Data		DC 50R	DC 75R	DC 100R	DC 150R	DC 200R
Dehumidification capacity at 30°C – 80%	l/24h	58.4	80.2	108.6	157.1	210.8
Dehumidification capacity at 20°C – 60%	l/24h	25.3	36.2	49.4	69.7	95
Dehumidification capacity at 10°C – 70%	l/24h	17.3	26.6	33.7	44.3	60.9
Air circulation	m^3/h	500	800	1000	1400	1650
Compression available	Pa	40				
Nominal power consumption [1]	kW	0.7	1.2	1.6	1.9	2.5
Maximum current consumption [2]	A	4.0	6.8	7.8	12.1	15.7
Temperature/humidity operating range	C°/ % RH	5- 36°C / 40- 99% RH				
Voltage supply	V/Ph/Hz	230/1/50				
Sound pressure levels [3]	dB(A)	40	43	43	45	47
Refrigerant / fill volume	Type/g	R410A / 470	R410A / 600	R410A / 700	R410A / 1200	
Total of CO_2 equivalent [4]	t-CO_2 e	0.98	1.25	1.46	2.51	
Dimensions (H x W x D)	mm	680 x 695 x 252	681 x 1006 x 253		770 x 1255 x 300	
Weight	kg	53	65	68	102	102

1) at t_R = 30°C; humidity = 80% RH
2) full load current; FLA = full load amperage
3) Sound pressure level Laboratory value at a distance of 1 m (free field, ISO 9614). Values at the installation site may deviate.
4) R410A global warming potential (GWP) = 2,088 CO_2e

For ceiling mounting
Condair **DC-C**

Technical Data		DC 50C	DC 75-C	DC 100C	DC 150C	DC 200C
Dehumidification capacity at 30°C – 80%	l/24h	55.7	79.6	108.7	169.8	206.4
Dehumidification capacity at 20°C – 60%	l/24h	24.9	35.9	49.5	75.4	93.2
Dehumidification capacity at 10°C – 70%	l/24h	16.9	26.1	35.6	56.6	69.0
Air circulation	m^3/h	500	800	1000	1400	1650
Available static pressure (higher pressure optional)	Pa	50 - 150				
Nominal power consumption [1]	kW	0.7	1.3	1.7	2.1	2.7
Maximum current consumption [2]	A	5.9	8.5	10.2	12.6	16.3
Temperature/humidity operating range	C°/ % RH	5 - 36°C / 40 - 99% RH				
Voltage supply	V/Ph/Hz	230/1/50				
Sound pressure levels [3]	dB(A)	45	46	48	53	55
Refrigerant / fill volume	Type/g	R410A / 360	R410A / 600		R410A / 900	R410A / 1200
Total of CO_2 equivalent [4]	t-CO_2e	0.75	1.25		1.88	2.51
Dimensions (H x W x D)	mm	360 x 710 x 700	460 x 900 x 980		530 x 1050 x 1160	
Weight	kg	63	95	122	131	140

Technical Data		DC 300C	DC 440C	DC 500C
Dehumidification capacity at 30°C – 80%	l/24h	264.8	439.3	544
Dehumidification capacity at 20°C – 60%	l/24h	135,6	222.3	250.6
Air circulation	m^3/h	3500	4200	
Available static pressure (higher pressure optional)	Pa	150 - 250		
Nominal power consumption [1]	kW	3.8	6.2	7.2
Maximum current consumption [2]	A	6.4	9.7	11
Temperature/humidity operating range	C°/ % RH	20 - 36°C / 40 - 99% RH		
Voltage supply	V/Ph/Hz	400/3/50		
Sound pressure levels [3]	dB(A)	63	64	
Refrigerant / fill volume	Type/g	R410A / 2500	R410A / 2700	R410A / 3000
Total of CO_2 equivalent [4]	t-CO_2e	5,22	5,64	6,26
Dimensions (H x W x D)	mm	704 x 1437 x 1050		
Weight	kg	160	180	230

With external heat dissipation
Condair **DC-N**

Technical data / Dehumidifier		DC 270N	DC 350N	DC 450N	DC 550N	DC 750N	DC 950N
Dehumidification capacity at 30°C – 80%	l/24h	247.4	364.3	486.3	571.5	846.6	1055
Dehumidification capacity at 20°C – 60%	l/24h	115.4	171.3	225.0	271.9	390.2	515.5
Dehumidification capacity at 10°C – 70%	l/24h	87.7	136.6	174.6	204.4	293.1	413.6
Air circulation	m^3/h	3500	4200	4200	5500	7000	8500
Available static pressure (higher pressure optional)	Pa	50 - 150					
Sensitive cooling capacity [1] (35°C outdoor air)	kW	3	5.1	6.9	8.7	11.4	14.5
Nominal power consumption [1) 5)]	kW	4	5.2	8.3	9.2	14.2	18.2
Maximum current consumption	A	12.4	14.6	20.4	21.6	35.2	41.8
Temperature/humidity operating range	C°/ % RH	5 - 36°C / 40 - 99% RH					
Voltage supply	V/Ph/Hz	400/3/50					
Sound pressure levels [3]	dB(A)	54	55	55	56	56	56
Coolant	Type	R410A					
Fill volume	g	6000	5200	5500	10000	14800	12000
Total of CO_2 equivalent [4]	t-CO_2e	12.53	10.9	11.48	20.88	30.90	25.06
Dimensions (H x W x D)	mm	1378 x 1154 x 704			1750 x 1504 x 854		
Weight	kg	207	211	215	415	423	430

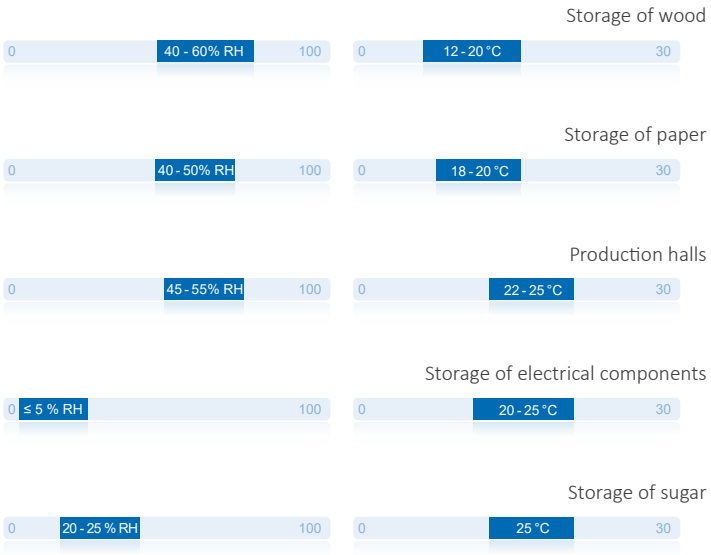
Technical data / Outdoor condenser		DC 270N	DC 350N	DC 450N	DC 550N	DC 750N	DC 950N
Voltage supply	V/Ph/Hz	230/1/50					
Number of fans		2		1		2	
Air flow	m^3/h	4400	3900	7450	7250	15200	14000
Electrical connected load	kW	2 x 0,18		1 x 0,76		2 x 0,73	
Input Current	A	2 x 0,8		1 x 3,3		2 x 3,3	
Inlet/outlet connection diameter	mm	16		18	22	28	
Operating range — temperature	°C	10 - 40					
Sound pressure level 10m	dB(A)	40		43		46	
Dimensions (H x W x D)	mm	490 x 1525 x 344		1008 x 1545 x 487		1008 x 2795 x 487	
Weight	kg	32,2	37,02	101	107	172	184

1) at t_R = 30°C; humidity = 80% RH
2) full load current; FLA = full load amperage
3) Sound pressure level Laboratory value at 1 m distance (free field, ISO 9614), fan: static pressure 50 Pa. Values at the installation site may deviate.
4) R410A global warming potential (GWP) = 2,088 CO_2e 5) incl. outdoor condenser

For low temperatures
Condair **DC-LT**

Technical Data		DC 270LT	DC 350LT	DC 450LT
Dehumidification capacity at 30°C – 80% RH	l/24h	254.2	379.8	469.2
Dehumidification capacity at 20°C – 60% RH	l/24h	113.2	170.6	222.6
Dehumidification capacity at 10°C – 70% RH	l/24h	96	132.4	175.2
Dehumidification capacity at 5°C – 70% RH	l/24h	72.5	101.3	132
Air circulation	m^3/h	3500	4200	4200
Nominal power consumption [1]	kW	4.1	5.2	8.1
Maximum current consumption [2]	A	10.8	13	17.1
Available static pressure (higher pressure optional)	Pa	50 - 150		
Temperature/humidity operating range	C°/ % RH	1 - 36°C / 40 - 99%		
Voltage supply	V/PH/Hz	400/3/50		
Sound pressure levels [3]	dB(A)	54	55	55
Refrigerant / fill volume	Type/g	6000	5000	5000
Total of CO_2 equivalent [4]	t-CO_2 e	12.52	10.44	10.44
Dimensions (H x W x D)	mm	1378 x 1154 x 704		
Weight	kg	227	231	235

Technical Data		DC 550LT	DC 750LT	DC 950LT
Dehumidification capacity at 30°C – 80% RH	l/24h	590.9	845.9	1028
Dehumidification capacity at 20°C – 60% RH	l/24h	270.5	386,5	508.2
Dehumidification capacity at 10°C – 70% RH	l/24h	206.2	298.9	391.7
Dehumidification capacity at 5°C – 70% RH	l/24h	155.5	227.9	362.3
Air circulation	m^3/h	5500	7000	8500
Nominal power consumption [1]	kW	9.1	14.3	18.1
Maximum current consumption [2]	A	18.3	28.6	35.2
Available static pressure (higher pressure optional)	Pa	50 - 150		
Temperature/humidity operating range	°C / % RH	1 - 36°C / 40 - 99%		
Voltage supply	V/PH/Hz	400/3/50		
Sound pressure levels [3]	dB(A)	56	56	56
Refrigerant / fill volume	Type/g	13500	14000	15500
Total of CO_2 equivalent [4]	t-CO_2 e	28.18	29.23	32.36
Dimensions (H x W x D)	mm	1750 x 1504 x 854		
Weight	kg	435	443	450

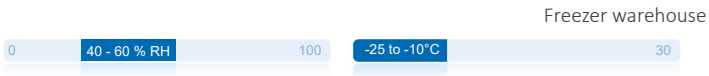


Storage

Excessive humidity is a pervasive problem in the storage industry that can significantly impact product quality and safety. One of the primary culprits is incoming outside air, which can introduce moisture into the storage environment. However, moisture released by stored products can also contribute to elevated humidity levels, creating an environment ripe for moisture damage, caking, mould growth, and corrosion.

These can lead to significant losses for storage management, as compromised products must be discarded or sold at a reduced price, lowering overall profits. Additionally, the formation of condensation on walkways, technical equipment, louvre curtains, and other components can lead to a hazardous and unsanitary working environment, posing a risk to workers' health and safety.

The use of suitable dehumidification systems guarantees efficient and safe operation of warehouses and cold stores. In addition to ensuring optimum product quality at all times, a safe and hygienic working environment is guaranteed.



Cold storage

In the storage of food items such as meat and sausage products, dairy products, baked goods, and frozen foods, maintaining an optimal balance between appropriate room temperature and humidity is of utmost importance for ensuring consistently high product quality over time. Frequently, deviations from the ideal conditions for only a short period can lead to significant damages.

A particular challenge in this regard is the regulation of humidity. It is unavoidable that warm and humid air, for example during the introduction or removal of goods, flows into the storage area or that newly deposited products release moisture into the air. The permanent and secure removal of this moisture poses an ongoing problem for many operators, especially when dealing with storage temperatures often well below 0°C. When water condenses out of the air, it manifests as liquid or, in the case of frozen storage, as ice on floors, walls, and goods. This leads to damage to the products and compromises operational safety, as individuals can slip, get injured, or forklifts can skid on slippery ice.

Recirulating air coolers that draw air from the warehouse, cool it in a heat exchanger, and then blow it back into the storage area only provide limited dehumidification of the air.

Temperatures below freezing point rapidly lead to icing of the cooler with this method of dehumidification, necessitating a subsequent defrosting phase during which neither cooling nor dehumidification are available. Additionally, the cooler must be set to very low operating temperatures (approximately 5 to 7 K below room temperature) to enable dehumidification at such cold room temperatures at all. This approach is highly energy and cost-intensive.

Pharmaceutical industry

Many pharmaceutical products are made from hygroscopic raw materials in powdered or granulated form. High and uncontrolled humidity during the tableting and packaging process can cause a variety of problems that are often difficult to solve.

If powders or granulates come into contact with the water vapor in the air, this can have a serious effect on both the production process and product quality.

In this way, powdery raw materials can clump together and block pneumatic conveying systems, resulting in time-consuming cleaning processes and production interruptions. Moisture-related uneven dosing can lead to uncontrolled and limited effectiveness of the active ingredients.

Deviations in volume, weight, color, and product characteristics, as well as potentially reduced product shelf life, have negative impacts on the perception of the company's brand.

Excessive humidity and condensation also favor potential bacterial or mold growth, which can result in prolonged production interruptions with corresponding devastating financial consequences.

Laboratories, as well, must accurately control humidity to ensure the generation of precise and dependable outcomes. Dehumidification systems can maintain humidity levels at the optimal range throughout the production and packaging stages, thus guaranteeing peak production security and efficiency.

Condair offers a wide variety of technologies and accessories to help you discover the ideal solution for your specific requirements.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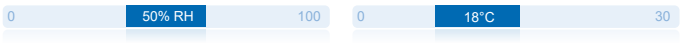

Water suppliers

Condensation is one of the biggest challenges faced by companies operating and maintaining equipment at water supply facilities, particularly during the warmer months of the year.
The infiltration of warm, humid air into cooler buildings can lead to condensation forming on the pipes and fittings that carry the water, and other colder components.

This can cause considerable damage to technical systems and the building itself:

- Destruction of anti-corrosion coatings
- Corrosion of electrical contacts and damage to sensitive electronics
- Droplet and mold formation
- Mold build-up and microbe growth
- Clumping of chemicals and additives
- Wet surfaces representing a safety risk for staff

Powerful dehumidification systems can effectively and efficiently protect technical equipment in water supply facilities from all kinds of moisture-related damage.

They can also help to significantly reduce the amount of downtime required for maintenance by keeping equipment in peak condition. Plus, they keep the working environment safe and hygienic for staff.

Food

When it comes to food production, processing, and storage, maintaining the highest levels of hygiene standards is paramount for companies. Alongside the infiltration of moisture from warm and humid external air, as well as from people and the products themselves, etc., the frequent and thorough cleaning procedures required in this industry can result in a significant additional accumulation of moisture within production facilities. Dehumidifiers stand as the most effective and efficient solution to ensure the maintenance of optimal conditions for uninterrupted, hygienic, and safe operations.

Large quantities of water vapor can be swiftly extracted, thereby preventing condensation and droplet formation. Downtimes caused by cleaning processes are minimized. Transport systems become operational promptly after cleaning.

Potential risks to personnel, such as wet floors or mist formation, are averted, and the growth of germs is prevented altogether.

Efficiency

One traditional method of dehumidification that is still commonplace today is a simple ventilation and circulation system, whereby the damp air is sucked in via a ventilator and dryer air streams in from outside. This external air must then be reheated, which takes a huge amount of energy. This method is therefore incredibly wasteful.

It is far more efficient to run dehumidifiers based on a closed cooling circuit system. All Condair industrial dehumidifiers work according to the heat pump principle, whereby all of the warmth given up in the heat pump circuit is used to heat the room. This considerably decreases operating costs. Compared to a simple ventilation system with supply and exhaust air streams, a dehumidifier can be up to 60% more efficient.

Desiccant dryers can also be operated very economically when existing media such as steam or hot water are used or are combined with the electric regeneration heater.

The use of such hybrid reactivation leads, especially in larger applications, to a significant energycost savings and thus to a strong reduction in operating costs.

Planning and service

The possibilities for air dehumidification are extensive and diverse. To select the appropriate system, it is recommended to consult a specialist during the project planning phase who can provide objective and knowledgeable advice to consultants, installers and operators.

You can always receive assistance from the experts at Condair for planning, sizing, and selecting the air dehumidification system that best suits your requirements.
And if you ever experience an issue, help is available fast for both industrial and commercial customers. Condair offers a nationwide customer service program which you can also use to source maintenance and commissioning services for your dehumidifier as needed.

Condair offers the following product-applicable services:

- Planning support
- On-site consultation and sales with our specialists
- Software-assisted sizing and calculation
- Nationwide after-sales service
- Spare parts


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