Dessicant dryers for simple reliability

CD Series / AD Series / BD Series

Atlas Copco

The right desiccant dryer for your application

A dry compressed air system is essential to maintain the reliability of production processes and the quality of your end products. Untreated air can cause corrosion in pipe work, premature failure of pneumatic equipment, and product spoilage. Atlas Copco's desiccant dryers produce dry compressed air in a reliable and energy-efficient way while protecting your systems and processes.

High reliability

Compressed air entering the air net is always 100% saturated. When it cools, the moisture will condense, causing damage to your air system and finished products. Removing moisture from compressed air with a pressure dewpoint as low as -40°C/-40°F, Atlas Copco desiccant dryers eliminate system failures, production downtime and costly repairs.

Competitive performance

A dewpoint down to -40°C/-40°F together with simple and easy controls guarantee the dryer operates in the best way possible.

Good efficiency

Properly sized pipes and valves ensure a limited pressure drop. Several options are available to increase the efficiency and to reduce the energy consumption.

Limited maintenance

Atlas Copco dryers have a small footprint thanks to the all-in-one design. Delivered ready for use, installation is straightforward, minimizing costly production downtime. All internal components are easily accessible to facilitate maintenance. The use of high-grade desiccant and high-quality valves results in three-year maintenance intervals.

Assuring your peace of mind

Through continuous investment in our competent, committed and efficient service organization, Atlas Copco ensures superior customer value by maximizing productivity. With a presence in over 170 countries, we offer professional and timely service through interaction and involvement. Uptime is guaranteed by dedicated technicians and 24/7 availability.

How does a desiccant dryer work?

Wet air passes directly through the desiccant medium which adsorbs the moisture. The desiccant medium has a finite capacity for adsorbing moisture before it must be dried out, or regenerated. To do this, the tower containing saturated desiccant medium is depressurized and the accumulated water is driven off. How this happens depends on the type of desiccant dryer:

- Heatless dryers use only compressed air as a purge.
- Blower purge dryers use a combination of air from an external blower, heat and minimal compressed air.

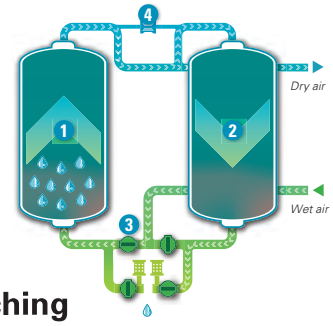
HEATLESS DESICCANT DRYERS

The drying process

- Wet compressed air flows upward through the desiccant which adsorbs the moisture, from bottom to top (1).

The regeneration process

- Dry air from the outlet of the drying tower is expanded to atmospheric pressure and sent through the saturated desiccant, forcing the adsorbed moisture out (2) (4).
- After desorption, the blow-off valve is closed and the vessel is re-pressurized.



Switching

- After regeneration, the functions of both towers are switched (3).

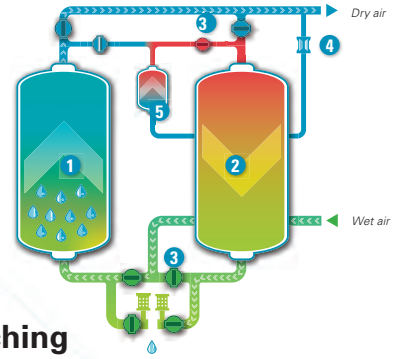
HEATED PURGE DESICCANT DRYERS

The drying process

- Wet compressed air flows upward through the desiccant which adsorbs the moisture, from bottom to top (1).

The regeneration process

- Dry air from the outlet of the drying tower is expanded to atmospheric pressure (4) and sent over the heater (5). The heated air is then sent through the saturated desiccant (2) forcing the adsorbed moisture out, from top to bottom.
- After the heating process, the hot tower desiccant is cooled. Cooling is done by expanding dry compressed air from the outlet over the hot reactivated tower, from top to bottom.



Switching

- After regeneration, the functions of both towers are switched (3).

BLOWER PURGE DESICCANT DRYERS

The drying process

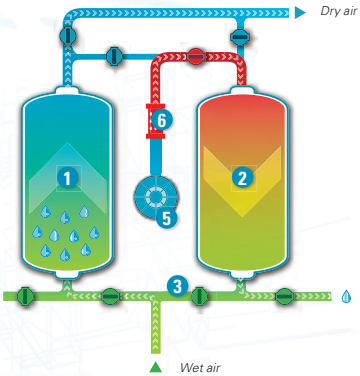
- Wet compressed air flows upward through the desiccant which adsorbs the moisture, from bottom to top (1).

The regeneration process

- The blower (5) takes ambient air and blows it over the external heater (6). The heated air is then sent through the saturated desiccant (2), forcing the adsorbed moisture out, from top to bottom.

Cooling

- **Purge**: After the heating, the hot tower desiccant is cooled. Cooling is done by expanding dry compressed air from the outlet of the adsorbing vessel over the hot reactivated tower, from top to bottom.



CD
Simple reliability

1

High-quality desiccant

- Reliable high adsorption capacity desiccant for maximum performance.
- Pressure dewpoint of -40°F/-40°C.

2

Butterfly valves

- High-performance butterfly valves with actuators ensure long lifetime.

3

Modular piping with flanged connections

- Flanged piping simplifies maintenance and minimizes the chance of leakages.
- Properly sized piping

4

Filters (optional)

- Pre-filter(s) protect desiccant against oil contamination, increasing the lifetime of the desiccant.
- After-filter protects the network against desiccant dust, avoiding network contamination.
- Can be mounted directly on the inlet and outlet of the dryer, for low pressure drop.
- Allow for easy assembly and maintenance as no extra piping or filter connections are required.

5

Cubicle

- Nema 4 protected.
- Electronic control board.
- Timer-based operation.
- Optional capacity based operation (PDP Control).
- Load/unload freeze contact.

6

Robust and compact design

- Standard frame, including forklift slots and lifting eyes for easy handling.
- Vessel connecting flanges are integrated into the top and bottom shells, lowering the total unit height.

7

Check valve

- Nickel-plated.
- Wafer type.
- Integrated purge nozzle.

AD

High reliability and reduced energy costs

1

High-quality desiccant

- Reliable high adsorption capacity desiccant for maximum performance.
- Pressure dewpoint of -40°C/-40°F.

2

Butterfly valves

High-performance butterfly valves with actuators ensure long lifetime.

3

Galvanized piping with flanged connections

- Galvanized piping simplifies maintenance and minimizes the chance of leakages.
- Properly sized piping.

4

Low-watt density heater

- Stainless steel design to ensure long lifetime.
- Nickel-plated heater pipe protects against corrosion.
- Heater is installed in an insulated heater pipe to assure the most energy-efficient setup.

5

Filters (optional)

- Pre-filter(s) protect desiccant against oil contamination, increasing the lifetime of the desiccant.
- After-filter protects network against desiccant dust, avoiding network contamination.
- Mounted directly on the inlet and outlet of the dryer, for easy assembly.

6

Advanced control and monitoring system

- Fitted inside a real IP54 cubicle for easy cabling and safety.
- Monitoring of all parameters to ensure maximum reliability for your installation.

7

Robust and compact design

- Standard frame, including forklift slots and lifting eyes for easy handling.
- Vessel connecting flanges are integrated into the top and bottom shells, lowering the total unit height.

8

Check valve

- Nickel-plated.
- Wafer type.

BD
Industrial performance

1

High-quality desiccant

- Reliable high adsorption capacity desiccant for maximum performance.
- Pressure dewpoint of -40°C/-40°F.

2

Butterfly valves

High-performance butterfly valves with actuators ensure long lifetime.

3

Galvanized piping with flanged connections

Galvanized and properly sized piping simplifies maintenance and minimizes the chance of leakages.

4

Low-watt density heater

- Stainless steel design to ensure long lifetime.
- Nickel-plated heater pipe protects against corrosion.
- Heater is installed in an insulated heater pipe to assure the most energy-efficient setup.

5

Filters (optional)

- Pre-filter(s) protect desiccant against oil contamination, increasing the lifetime of the desiccant.
- After-filter protects network against desiccant dust, avoiding network contamination.
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Advanced control and monitoring system

- Fitted inside a real IP54 cubicle for easy cabling and safety.
- Monitoring of all parameters to ensure maximum reliability for your installation.

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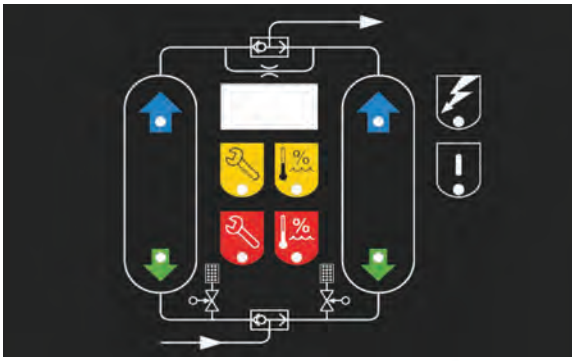
Robust and compact design

- Standard frame, including forklift slots and lifting eyes for easy handling.
- Vessel connecting flanges are integrated into the top and bottom shells, lowering the total unit height.

Advanced control and monitoring systems

Atlas Copco's Elektronikon® control and monitoring system takes continuous care of your AD or BD desiccant dryer to ensure optimal productivity and efficiency at your site. *(Optional for CD360-1600)*



SIMPLE RELIABLE CONTROLS

Atlas Copco's CD Dryers are operated with easy to use timer-based controller. Despite its simpleness it can offer energy savings through it's standard load/unload freeze contact and optional capacity based operation (PDP Control) with dewpoint display

USER-FRIENDLY INTERFACE

Available in 32 languages, this graphical 3.5-inch high-definition color display with pictograms and LED indicators for key events is easy to use. The keyboard is durable to resist tough treatment in demanding environments.

COMPREHENSIVE DISPLAY

Valuable items of information displayed include the ServicePlan indicator and preventive maintenance warnings.

CONTROL AND MONITORING

Internet-based visualization

The Elektronikon® system monitors and displays key parameters such as dewpoint, vessel pressure and inlet temperature, and includes an energy-savings indicator. Internet-based visualization of your dryer is possible by using a simple Ethernet connection.

Optimize your system

SCOPE OF SUPPLY

Air circuit	Inlet air flange
	Exhaust silencer
	Outlet air flange
Connections	DIN-flanges
	ANSI-flanges
Electrical components	Pre-mounted electrical cubicle
	Elektronikon® control and monitoring system (only on BD & AD)
	Nema 4, Nema 4X, IP54
	Voltage free contacts for remote alarm and warning signals
Framework	Base frame with forklift slots
	Lifting holes
Mechanical approval	PED approval
	ASME approval
	CRN approval
	ML approval

not all options are available for all dryer types

ADDTIONAL FEATURES & OPTIONS	CD400-1600	AD400-1600	BD360-1600
Maximum working pressure 152 psi	●	●	●
Maximum working pressure 210 psi	–	–	–
Timer card control	●	–	–
Elektronikon® Graphical Control	◆	●	●
NEMA 4	●	●	●
NEMA 4X	◆	◆	◆
PNP Purge Control	◆	◆	◆
Remote PDP Output (4-20m)	◆	◆	◆
Pre and after filter for GA oil-injected compressor (DD-PD-DDP)	◆	◆	◆
Pre and after filter for Z oil-free compressor (PD-DDP)	◆	◆	◆
ASME pressure relief valves	●	●	●
Sonic nozzle	◆	◆	◆
HIgh inlet temperture variant	–	◆	◆
Insulation *(standard with AD-100°F PDP)*	–	◆	◆
-100°F/-70°C PDP	–	◆	–

– *Not available* ◆ *Optional* ● *Standard*

Technical specifications

HEATLESS DESICCANT DRYERS

DRYER TYPE	Inlet flow FAD 7 bar(e)/100 psig			Pressure drop (excluding filters)		Inlet/outlet connections	Filter Sizes			Dimensions						Weight	
	l/s	m³/hr	cfm	bar	psi	NPT/FLG	Pre-filters		After-filter	mm			in			kg	lbs
							1 µm 0.1 ppm	0.01 µm 0.01 ppm	1 µm	L	W	H	L	W	H		
CD 400	400	1450	850	0.2	2.8	3"ANSI	DD425⁺	PD425⁺	DDp425⁺	1067	1956	2616	42	77	103	950	2094
CD 480	500	1790	1050	0.2	2.8	3"ANSI	DD550⁺	PD550⁺	DDp550⁺	1067	1956	2616	42	77	103	1030	2271
CD 575	580	2070	1220	0.2	2.8	3"ANSI	DD550⁺	PD550⁺	DDp550⁺	1067	2108	2413	42	83	95	1310	2888
CD 800	800	2890	1700	0.2	2.8	4"ANSI	DD970	PD970	DDp970	1245	2489	2515	49	98	99	1940	4277
CD 950	940	3400	2000	0.2	2.8	4"ANSI	DD970	PD970	DDp970	1245	2489	2515	49	98	99	2120	4674
CD 1200	1230	4420	2600	0.2	2.8	4"ANSI	DD1260	PD1260	DDp1270	1245	2464	3073	49	97	121	2600	5732
CD 1450	1440	5190	3050	0.2	2.8	6"ANSI	DD1600	PD1600	DDp1600	1626	2642	3353	64	104	132	3445	7595
CD 1600	1610	5810	3415	0.2	2.8	6"ANSI	DD1600	PD1600	DDp1600	1626	2642	3353	64	104	132	3700	8157

HEATED PURGE DESICCANT DRYERS

DRYER TYPE	Inlet flow FAD 7 bar(e)/100 psig			Pressure drop (excluding filters)		Inlet/outlet connections	Filter sizes (recommended)			Dimensions						Weight		Average Power
	l/s	m³/hr	cfm	bar	psi		Pre-filters		After-filter	mm			in			kg	lbs	kW
							1 µm 0.1 ppm	0.01 µm 0.01 ppm	1 µm	L	W	H	L	W	H			
AD 400	400	1440	848	0.18	2.6	3" ANSI	DD425⁺	PD425⁺	DD425⁺	2692	1930	1194	106	76	47	1038	2288	7.9
AD 480	480	1728	1017	0.18	2.6	3" ANSI	DD630	PD630	DDp630	2692	1930	1194	106	76	47	1130	2491	10.8
AD 575	575	2070	1218	0.18	2.6	3" ANSI	DD630	PD630	DDp630	2489	2083	1194	98	82	47	1410	3109	11.8
AD 800	800	2880	1695	0.18	2.6	4" ANSI	DD970	PD970	DDp970	2692	2464	1372	106	97	54	2106	4643	15.8
AD 950	950	3420	2013	0.18	2.6	4" ANSI	DD1260	PD1260	DDp1260	2692	2464	1372	106	97	54	2280	5027	18
AD 1200	1200	4320	2543	0.18	2.6	6" ANSI	DD1260	PD1260	DDp1260	3251	2438	1372	128	96	54	2750	6063	22.3
AD 1450	1450	5220	3073	0.18	2.6	6" ANSI	DD1600	PD1600	DDp1600	3327	2286	1702	131	90	67	3388	7469	26.3
AD 1600	1600	5760	3390	0.18	2.6	6" ANSI	DD1600	PD1600	DDp1600	3327	2286	1702	131	90	67	3560	7848	29

BLOWER PURGE DESICCANT DRYERS

DRYER TYPE	Inlet flow FAD 7 bar(e)/100 psig			Average power consumption		Pressure drop (excluding filters)		Inlet/outlet connections	Filter sizes (recommended)			Dimensions						Weight		
	l/s	m³/hr	cfm	kW	hp	bar	psi		Pre-filters		After-filter	mm			in			kg	lbs	kW
									1 µm 0.1 ppm	0.01 µm 0.01 ppm	1 µm	L	W	H	L	W	H			
BD 480	480	1728	1017	8.4	11.3	0.16	2.32	3" Flange	DD425⁺	PD425⁺	DDp425⁺	2558	1764	1024	101	69	40	1275	2811	10.4
BD 630	630	2268	1335	8.4	11.3	0.16	2.32	3" Flange	DD550⁺	PD550⁺	DDp550⁺	2612	1884	1024	103	74	40	1560	3439	14.8
BD 970	970	3492	2055	8.4	11.3	0.16	2.32	4" Flange	DD970	PD970	DDp970	2702	2359	1175	106	93	40	2540	5600	21.8
BD 1260	1260	4536	2670	8.4	11.3	0.16	2.32	4" Flange	DD1260	PD1260	DDp1260	2681	2472	1175	106	97	46	3035	6691	27.7
BD 1600	1600	5760	3390	8.4	11.3	0.11	1.60	6" Flange	DD1600	PD1600	DDp1600	2548	2720	2199	100	107	87	4100	9039	35.8

Reference conditions:
Compressed air inlet temperature: 35°C/100°F.
Inlet relative humidity: 100%.
Dryer inlet pressure for 11 bar variants, after inlet filtration.

Driven by innovation

We are celebrating over 140 years of innovation and experience. Our mission is to continue to bring sustainable productivity through safer, cleaner, more energy efficient, cost-effective compressed air technology. As a result, every compressed air solution we create helps customers operate with greater efficiency, economy, and productivity.

Local interaction

Atlas Copco Compressors LLC is headquartered in Rock Hill, SC. We have major sales, manufacturing, production, and distribution facilities located in California, Illinois, Massachusetts, North Carolina, South Carolina, and Texas. We take the best possible care of our customers through regional customer centers and appointed distributors. Across all of our different business types and brands, we have over 116 locations and approximately 4,800 people in the U.S.

Committed to sustainability

We are among the top 100 sustainable companies in the world and a member of the Dow Jones World Sustainability Index. Atlas Copco has also been recognized by Forbes, Thomson-Reuters and Newsweek, among others, for our commitment to innovation and sustainability. All Atlas Copco Compressors facilities in the United States are triple certified to ISO 14001, ISO 9001 and OHSAS 18001, a set of standards to protect the environment, ensure product quality, and promote our employees' health and occupational safety.

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Committed to sustainable productivity

We stand by our responsibilities towards our customers,
towards the environment, and the people around us.
We make performance stand the test of time.
This is what we call – Sustainable Productivity.

Atlas Copco

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