

Refrigeration Air Dryers

ADQ

Capacity:
21-4200 m³/h



ADQ dryers Air purity

For many companies in today's competitive global market, the treatment of compressed air is not an option, but a necessity to reduce operating costs and increase production efficiency.

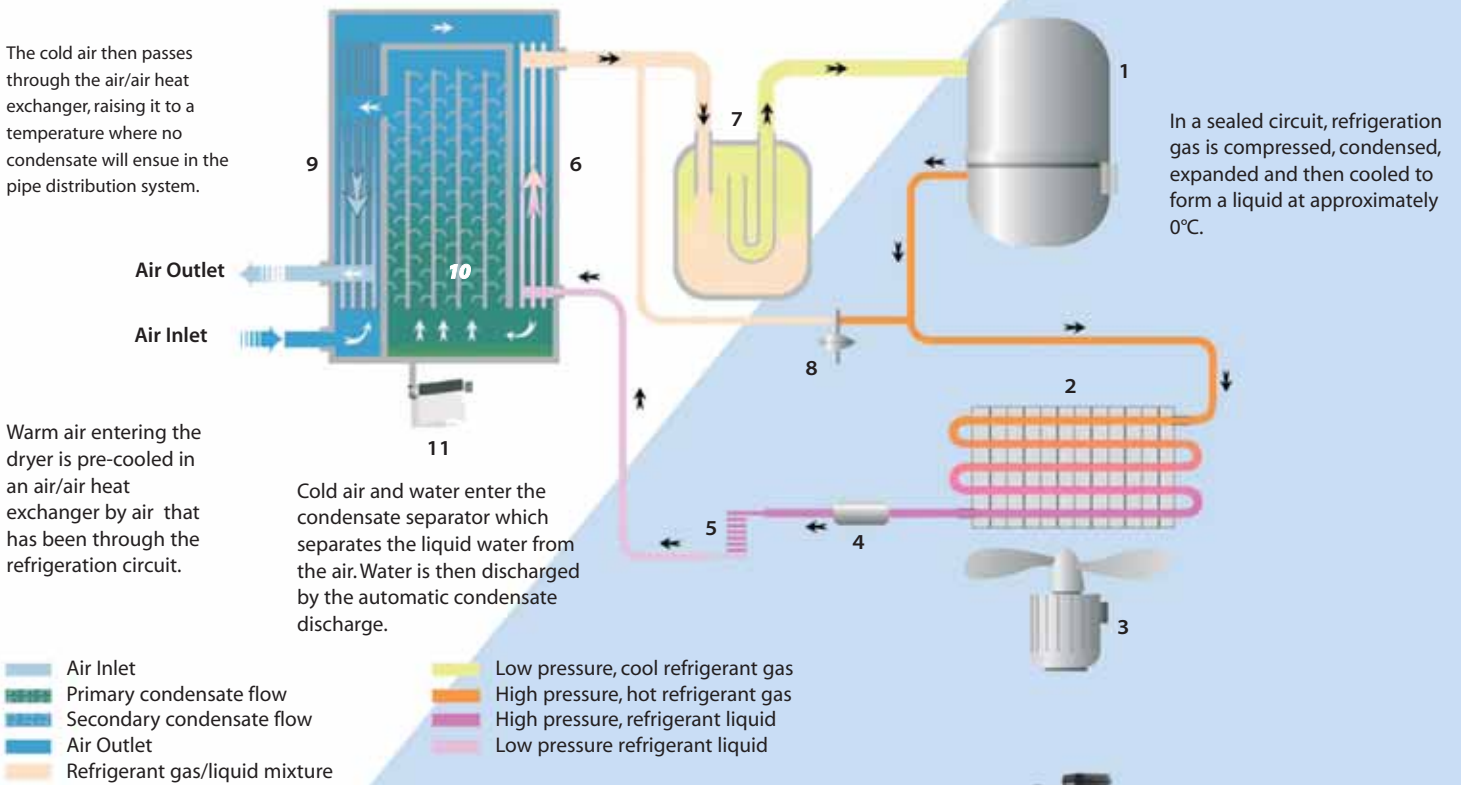
Being an efficient and simple technology, refrigeration dryers represent the preferred solution for the majority of these applications.

The ALUP Kompressoren ADQ dryers have been developed to supply dry compressed air for your production process, with a minimum power requirement and low pressure drop for optimum efficiency.

Pre-cooled air enters the air/refrigerant gas heat exchanger where the compressed air temperature is reduced. This causes condensate to develop and the correct dewpoint to be achieved.

The cold air then passes through the air/air heat exchanger, raising it to a temperature where no condensate will ensue in the pipe distribution system.

In a sealed circuit, refrigeration gas is compressed, condensed, expanded and then cooled to form a liquid at approximately 0°C.



- 1 Refrigerant compressor
- 2 Refrigerant condenser
- 3 Fan
- 4 Refrigerant filter
- 5 Capillary tube
- 6 Air/refrigerant heat exchanger
- 7 Liquid separator
- 8 Hot gas by-pass valve
- 9 Air/air heat exchanger
- 10 Condensate separator
- 11 Automatic condensate discharge



TECHNICAL SPECIFICATIONS

Types		ADQ 21	ADQ 36	ADQ 51	ADQ 72	ADQ 110	ADQ 141	ADQ 180	ADQ 216	ADQ 246	ADQ 312	ADQ 390	ADQ 462	ADQ 600	ADQ 720	ADQ 900	ADQ 1080	ADQ 1440	ADQ 1800	ADQ 2100	ADQ 3000	ADQ 4200	
Flow treated according to temperature of compressed air input	① 35 °C	m³/h. 21	36	51	72	110	141	180	216	246	312	390	462	600	720	900	1080	1440	1800	2100	3000	4200	
		Cfm 12.4	21.2	30.0	42.4	64.4	83.0	106	127	145	184	230	272	353	424	530	636	848	1060	1237	1766	2472	
40 °C	m³/h. 17.2	29.5	41.8	59.0	90.2	116	148	177	202	256	320	379	492	590	738	886	1181	1476	1722	2460	3444		
	Cfm 10.2	17.4	24.6	34.8	52.8	68	87	104	119	151	189	223	289	348	435	522	695	869	1014	1448	2027		
45 °C	m³/h. 14.5	24.8	35.2	49.7	75.9	97	124	149	170	215	269	319	414	497	621	745	994	1242	1449	2070	2898		
	Cfm 8.6	14.6	20.7	29.3	44.4	57.27	73	88	100	127	159	188	244	293	366	439	585	731	854	1219	1706		
Nominal electrical power 1	kW	0.13	0.16	0.19	0.27	0.28	0.61	0.67	0.79	0.87	1.07	1.19	1.45	1.82	2.01	2.64	3.57	3.90	4.46	5.55	6.80	10.20	
Power supply voltage	V/Hz/Ph							230/50/1						400/50/3									
Max. operating pressure	bar	16	16	16	16	16	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	
Refrigerant gases		R134a						R404A															
Air connections	gas/DN	3/4" M	3/4" M	3/4" M	3/4" M	3/4" M	1" F	1" F	1" 1/2" F	1" 1/2" F	1" 1/2" F	1" 1/2" F	1" 1/2" F	2" F	2" F	2" F	2" F	3" F	3" F	3" F	3" F	DN125	DN125
Weight	Kg.	19	19	20	25	27	44	44	53	60	65	80	80	128	146	158	165	325	335	350	550	600	

NOTES:

① Reference conditions

- Operating pressure : 7 bar (100 psi)
- Operating temperature : 35 °C
- Room temperature : 25 °C
- Pressure dew point : +3 °C +/- 1
- Available in different voltages and frequency values

Limit conditions:

- Working pressure : 16 bar (232 psi) (ADQ 21 up to 110)
- Working pressure : 13 bar (188 psi) (ADQ 141 up to 4200)
- Operating temperature : 55 °C
- Min/Max room temperature : +5 °C; +45 °C

CORRECTION FACTOR FOR CONDITIONS DIFFERING FROM THE PROJECT $K = A \times B \times C$

Room temperature	°C	25	30	35	40	45
A	1.00	0.92	0.84	0.80	0.74	(ADQ 21 up to 462)
	1.00	0.91	0.81	0.72	0.62	(ADQ 600 up to 4200)

Operating temperature	°C	30	35	40	45	50	55
B	1.24	1.00	0.82	0.69	0.58	0.45	(ADQ 21 up to 462)
	1.00	1.00	0.82	0.69	0.58	0.49	(ADQ 600 up to 4200)

Operation pressure	bar	5	6	7	8	9	10	11	12	13	14	15	16
C	0.90	0.96	1.00	1.03	1.06	1.08	1.10	1.12	1.13	1.15	1.16	1.17	(ADQ 21 up to 462)
	0.90	0.97	1.00	1.03	1.05	1.07	1.09	1.11	1.12				(ADQ 600 up to 4200)

The new flow rate value can be obtained by dividing the current or real flow rate by the correction factor related to the real operation conditions.

DIMENSIONS

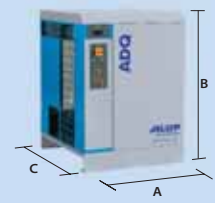


	A	B	C
ADQ21 to ADQ110	350	484	511
ADQ141 to ADQ180	370	764	515
ADQ216 to ADQ312	460	789	575
ADQ390 to ADQ462	580	899	604

Dimensions in mm

	A	B	C
ADQ600 to ADQ1080	735	1016	898
ADQ1440 to ADQ2100	1020	1560	1082
ADQ3000 to ADQ4200	100	1560	2099

Dimensions in mm



COMPACT INSTALLATION



Unique, light, and compact design makes dryer handling easy. The installation of the ADQ dryer is simple and requires no special equipment or foundation work.

To ensure operational reliability of the ADQ dryer range, it is recommended to install a ALUP Kompressoren pre-filter upstream of the dryer and a high efficiency oil removal filter downstream of the dryer to protect the air system against particle and oil contamination.

ADQ dryers

'AUTOMATIC ZERO LOSS' CONDENSATE DRAIN



All models are fitted with a SMART condensate drain. Each unit is specifically sized to each dryer and provides extremely reliable operation. The drain allows the removal of condensate only with no wastage of compressed air resulting in significant energy savings. The standard alarm facility warns the operator of any malfunction.

- Allows for the discharge of condensate only and NOT compressed air.
- Silent operation provides a more comfortable environment.

OPTIONS FOR ADQ

BY – PASS VALVE + FILTER SUPPORT



The optional by-pass facility allows the system to operate using the filters only during maintenance or malfunction to the dryer thus avoiding any down time.

PS: Filters are not included in the option.

FILTER SUPPORT



This option allows two filters to be installed on the rear side of the dryer, reducing overall dimensions and installation costs.

ENVIRONMENTALLY FRIENDLY

A key objective in the design of the ADQ dryer was to arrive with a product that offers performance, reliability and safety with lowest possible environmental impact. Thanks to the use of new technology and materials this major achievement that would not have been possible even a few years ago is now a reality.



- No compressed air wastage during the condensate discharge phase.
- Noiseless condensate discharge operation.
- Environmentally friendly thanks to the use of R 134a and R404A gas.
- No impact on the ozone layer.
- High energy savings due to low pressure drops throughout the system.
- Cleaner compressed air distribution network for higher quality air supply applications.

Products, Concepts, Solutions

Built on the needs of the customer

For almost 100 years, we at ALUP have produced quality air compressors.

With our innovative system concepts we offer customised solutions for almost all applications.

Our endeavour lies not only in supplying compressors, we offer ourselves as a

competent system provider, who is able to offer solutions to all users of compressed air.

That does not only apply to the consultation and installation phase of your new compressor(s), but naturally continues in all areas of service, maintenance and visualisation.

Challenge us!



Screw compressors



Piston compressors



Blower



Turbo compressors



Complete accessories



Control, regulate, monitor

- constant speed
2.2 – 400 kW/
5 – 13 bar
- variable speed controlled and direct drive
5.5 – 260 kW/
5 – 13 bar
- oil-free, with water injection
15 – 55 kW/
5 – 10 bar

- oil-free,
up to 10 bar
0.75 – 12 kW

- for normal pressure up to 10 bar
1.5 – 15 kW
- for medium pressure up to 15 bar
1.5 – 15 kW

- for high pressure up to 40 bar
2.2 – 45 kW
- as a booster for an input pressure up to 15 bar and an output pressure up to 40 bar
2.2 – 30 kW

- at constant speed
1.5 – 55 kW
300 – 1000 mbar
- with speed regulator and direct drive
3.0 – 55 kW
300 – 1000 mbar

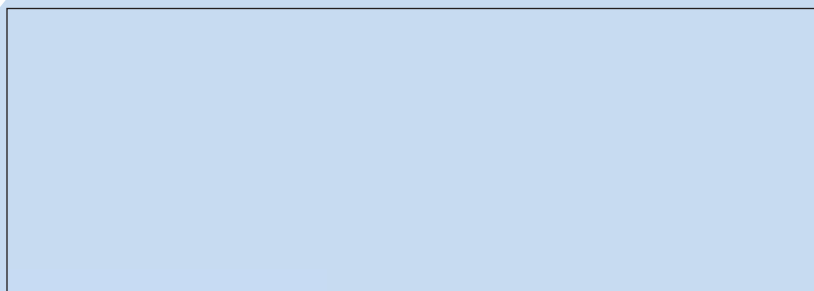
- oil-free,
up to 9 bar
65 – 370 kW

- refrigeration dryers
0.27 – 100 m³/min
- desiccant dryers
0.08 – 145 m³/min
- activated carbon adsorbers
0.08 – 145 m³/min
- filters,
all particle sizes
0.5 – 225 m³/min

- complete condensate management up to 120 m³/min

- lead-lag control
- consumption-dependant control
- visualisation (we bring your compressed air to the PC)
- tele-monitoring (the hotline of your compressed air station)

Your specialist



ALUP

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