

BECAUSE
IMPROVEMENT
NEVER
STOPS



ADQ 21-5040
REFRIGERANT DRYERS

THE RANGE THAT MEETS YOUR REQUIREMENTS

During the compression process, a compressor turns humidity in the intake air into condensate. This will cause wear and corrosion to the compressed air network and downstream equipment.

The results are costly interruptions to production and reduction in the efficiency and service life of the equipment used.

Refrigeration dryers prevent these negative consequences, condensing the water in the air and removing it.

① CLEAN AND DRY AIR BRINGS YOU VALUE

- Protect the air network from corrosion, rust and leakages.
- Improve final product quality.
- Boost productivity.
- Reduce maintenance costs.
- Prolong the life span of your air network and pneumatic tools.

② EASY INSTALLATION

- Very compact design.
- Easily installed, also in limited spaces thanks to the small footprint.
- Easy and fast installation of the filters and by-pass option.

③ USER-FRIENDLY OPERATION

- Refrigeration technology is straightforward and requires little maintenance.
- Quick air quality check via dew point display.
- Compatible with any compressor technology and complying with over 95% of the industrial applications.



④ ENVIRONMENTAL FRIENDLY REFRIGERANT GASES

- Lowest possible environmental impact.
- Use of R513A, R410A and R452A refrigerant gas.
- No impact on the ozone layer.





THE HIGHEST STANDARDS

BOOST YOUR PRODUCTIVITY

Quality components ensure low pressure drop, stable pressure dew point and efficient cooling. Clean and dry compressed air increases the overall productivity of your operations.

EASY INSTALLATION AND ACCESS

Compact design, small footprint and simple layout. Extremely easy to install.

COST-EFFICIENT SOLUTION

None or very little maintenance required. Very low energy consumption and high energy saving due to low pressure drops throughout the system.

USER-FRIENDLY OPERATION

Straightforward control panel with easy access to all the electrical components. Easy reading from dew point display indicating all relevant information.



- ① **REFRIGERANT COMPRESSOR** driven by an electric motor, cooled using refrigerant fluid and protected against thermal overload.
- ② **REFRIGERANT CONDENSER** air-cooled and with a large exchange surface for high thermal exchange.
- ③ **MOTOR-DRIVEN FAN** for the condenser cooling air flow.
- ④ **AIR-AIR EXCHANGER** with high thermal exchange and low load losses.
- ⑤ **AIR/REFRIGERANT EVAPORATOR** with high thermal exchange and low leakage rates.
- ⑥ **CONDENSATE SEPARATOR** for high efficiency.
- ⑦ **HOT GAS BYPASS VALVE** controls the refrigerant capacity under all load conditions preventing any formation of ice within system.
- ⑧ **CONTROL PANEL** indicating all relevant information.
- ⑨ **FREE CONTACTS** as standard for the range ADQ 600-5040 for a:
 - Remote start/stop
 - Remote general alarm
 - Remote drain alarm

PERSONALIZED FOR YOU: FEATURES AND OPTIONS

PDP DISPLAY

The operation of the ADQ dryer is monitored by an electronic controller indicating all relevant information:



TECHNICAL DETAILS

- Status of the refrigerant dryer and fan.
- Dew point display.

ALARM DISPLAY

- Alarm about high or low dew point.
- Fan probe failure (ADQ 72-462).
- Service warning.

CONTROL PANEL WITH FREE CONTACT (ON REQUEST) FOR A:

- PDP alarm.
- High refrigerant temperature.
- Fan probe failure.

STANDARD FEATURES (FOR ADQ 600-5040)

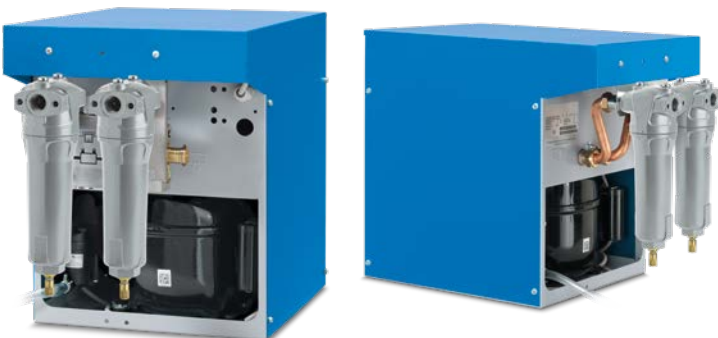
Free potential contacts for a:

- General alarm:
- High/low PDP alarm
- High-refrigerant temperature
- Probe failures
- High-pressure switch
- Drain alarm
- Remote start / stop
- Electrical failure

INTELLIGENT CAPACITIVE DRAIN DISCHARGE

The full refrigerant dryer range is equipped with a level-controlled condensate drain, using electronic level sensors to discharge only condensate without wasting any compressed air. This grants you the following benefits:

- Only water is discharged, no compressed air.
- Energy saving.
- No noise and environmentally friendly.



AVAILABLE OPTIONS (FOR ADQ 21-110)

BYPASS VALVE AND FILTER SUPPORT*

Allows the system to operate using the filters only during maintenance or malfunction of the dryer, thus avoiding any downtime.

FILTER SUPPORT*

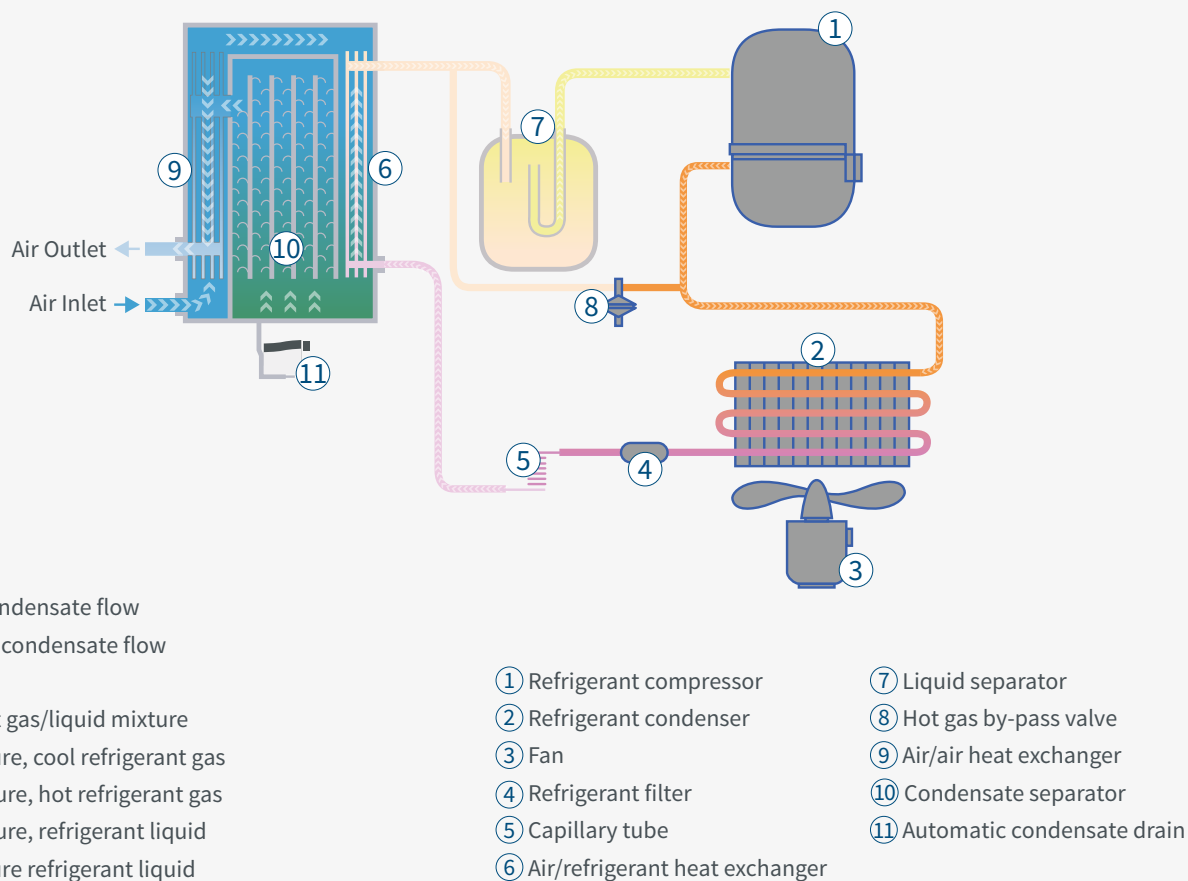
Allows two filters to be installed on the rear side of the dryer, reducing overall dimensions and installation costs.

* Filters are not included in the option.

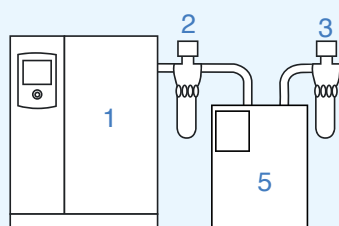
AIR DRYING PRINCIPLE

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

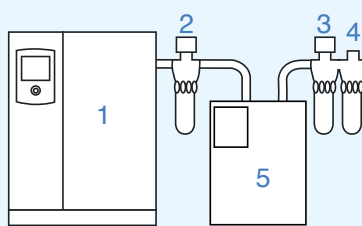
Based on an efficient and simple technology, refrigeration dryers represent the preferred solution for the majority of these applications. As a result the water from the air condenses and can be removed and a pressure dew point of +3°C can be reached at reference conditions.



TYPICAL INSTALLATIONS



High quality air with reduced dew point
(air purity to ISO 8573-1: class 1:4:2)



High quality air with reduced dew point and oil
concentration (air purity to ISO 8573-1: class 1:4:1)

1. Compressor with after cooler
2. G filter
3. C filter
4. V filter
5. Refrigerant dryer

Vertical receiver is always recommended.

TECHNICAL SPECIFICATIONS ADQ

Model	Max. working pressure		Air Treatment Capacity			power consumption		Inlet/outlet Connections	Dimensions			Weight	Refrigerant gas
	bar	psi	lt/min	m³/h	cfm	W	V/Hz/Ph		A mm	B mm	C mm		
ADQ 21	16	232	350	21	12,4	130	230/50/1	3/4" M	493	350	450	19	R513A
ADQ 36	16	232	600	36	21,2	164	230/50/1	3/4" M	493	350	450	19	R513A
ADQ 51	16	232	850	51	30	190	230/50/1	3/4" M	493	350	450	20	R513A
ADQ 72	16	232	1200	72	42,4	266	230/50/1	3/4" M	493	350	450	25	R513A
ADQ 110	16	232	1825	110	64,4	284	230/50/1	3/4" M	493	350	450	27	R513A
ADQ 141	14	203	2350	141	83	674	230/50/1	1" F	497	370	764	44	R513A
ADQ 180	14	203	3000	180	106	716	230/50/1	1" F	497	370	764	44	R513A
ADQ 216	14	203	3600	216	127	631	230/50/1	1" 1/2 F	557	460	789	62	R410A
ADQ 246	14	203	4100	246	145	705	230/50/1	1" 1/2 F	557	460	789	60	R410A
ADQ 312	14	203	5200	312	184	905	230/50/1	1" 1/2 F	557	460	789	62	R410A
ADQ 390	14	203	6500	390	230	969	230/50/1	1" 1/2 F	587	580	899	82	R410A
ADQ 462	14	203	7700	462	272	1124	230/50/1	1" 1/2 F	587	580	899	82	R410A
ADQ 600	14	203	10000	600	353	1540	400/50/3	2" F	1070	805	962	145	R410A
ADQ 720	14	203	12000	720	424	1980	400/50/3	2" F	1070	805	962	158	R410A
ADQ 900	14	203	15000	900	530	2010	400/50/3	2" 1/2 F	1070	805	962	165	R410A
ADQ 1080	14	203	18000	1080	636	2770	400/50/3	2" 1/2 F	1070	805	962	164	R410A
ADQ 1440	14	203	24000	1440	848	3260	400/50/3	3" F	1083	1020	1526	325	R410A
ADQ 1800	14	203	30000	1800	1060	3890	400/50/3	3" F	1083	1020	1526	335	R410A
ADQ 2100	14	203	35000	2100	1237	4750	400/50/3	3" F	1083	1020	1526	350	R410A
ADQ 2700	14	203	45000	2700	1589	6715	400/50/3	DN 125	1121	1020	1526	380	R452A
ADQ 3000	14	203	50000	3000	1766	6800	400/50/3	DN 125	2099	1020	1535	550	R452A
ADQ 4200	14	203	70000	4200	2472	10200	400/50/3	DN 125	2099	1020	1535	600	R452A
ADQ 5040	14	203	84000	5040	2966	12300	400/50/3	DN 125	2099	1020	1535	650	R452A

Reference conditions:

- Operating pressure: 7 bar (100 psi).
- Operating temperature: 35°C
- Room temperature: 25°C
- Pressure dew point: +4°C +/- 1
- Available in different voltages and frequency values.

Operating limit conditions:

- Max. operating pressure: 16 bar (232 psi) (ADQ 21 up to 110)
14 bar (203 psi) (ADQ 141 up to 5040)
- Max. inlet temperature: 55°C (60°C for ADQ 600-5040)
- Min./Max. ambient temperature: +5°C; 43°C (+5°C; 46°C for ADQ 600-5040)

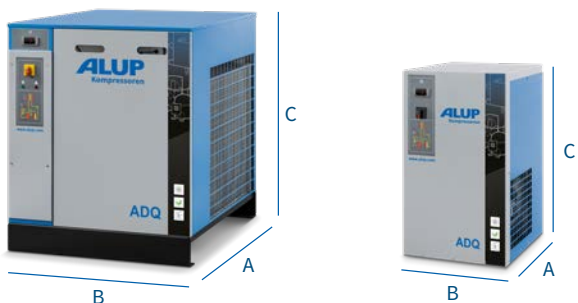
Correction factors to be used for site conditions outside of normal reference conditions (1) stated above = A x B x C

Room temperature	°C	25	30	35	40	43	46						
	A	1,00	0,92	0,84	0,8	0,79	/		(ADQ 21 up to 462)				
		1,00	0,91	0,81	0,72	/	0,62		(ADQ 60 up to 504)				

Operating temperature	°C	30	35	40	45	50	55	60						
	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	0,42		(ADQ 60 up to 5040)				

Operating temperature	bar	5	6	7	8	9	10	11	12	13	14	15	16		
	C	0,9	0,96	1,00	1,03	1,06	1,08	1,1	1,12	1,13	1,15	1,16	1,15		(ADQ 2 up to 462)
		0,9	0,97	1,00	1,03	1,05	1,07	1,09	1,11	1,12	1,15	-	-		(ADQ 60 up to 5040)

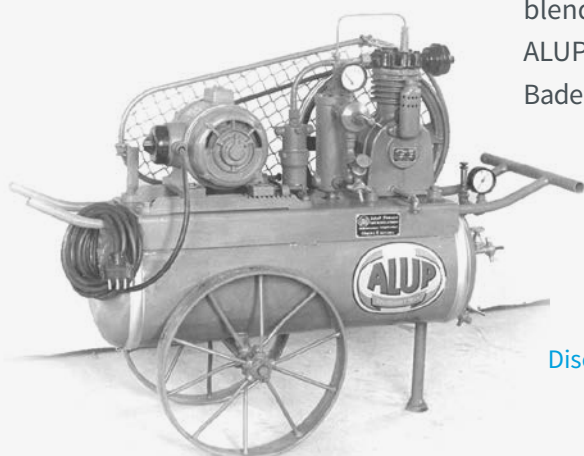
The new flow rate value can be obtained by dividing the current or real flow rate by the correction related to the real operation conditions.



ALUP'S HERITAGE

Founded in Germany in 1923, ALUP derives its name from the automotive products that were manufactured in the mechanical workshop in Köngen where the company came into existence: Auto-Luft-Pumpen. ALUP developed its first piston compressor just two years later. In 1980, rotary screw compressors were added to its product range.

The experience and expertise the company gained each year, coupled with a spirit of innovation, has led to today's high-quality product offer. The name ALUP Kompressoren has become synonymous with innovative technology blended with a strong sense of tradition. To this day, ALUP Kompressoren is operating out of the heart of Baden-Württemberg, where it all began nearly a century ago.



DRIVEN BY TECHNOLOGY, DESIGNED BY EXPERIENCE

Discover what happens when passion for technology meets hands-on industrial experience: Designs that are easier to install and maintain, allowing you to focus on your job. Our extensive product range features the right machine for you – including the options that meet your performance requirements perfectly. High energy efficiency ensures return on investment and reduces your carbon footprint. And, because customer proximity is one of our hallmarks, you will always be one step ahead when your needs change.



1923 1925

Founded in
Germany

First piston
compressor

1980

First rotary
screw compressors

today

Innovative technology





Contact your local ALUP Kompressoren representative



Care

Care is what service is all about: professional service by knowledgeable people, using high-quality original parts.

Trust

Trust is earned by delivering on our promises of reliable, uninterrupted performance and long equipment lifetime.

Efficiency

Equipment efficiency is ensured by regular maintenance. Efficiency of the service organization is how Original Parts and Service make the difference.


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