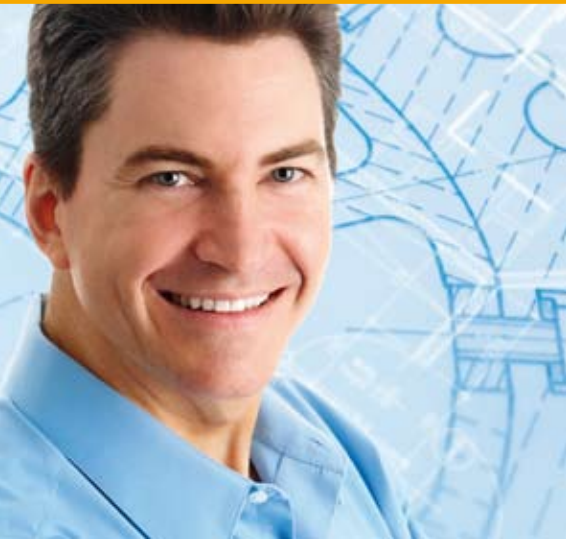


# COMPRESSED AIR TREATMENT DRYING · FILTRATION · CONDENSATE MANAGEMENT



CLEAN  
COMPRESSED AIR

# CLEAN COMPRESSED AIR FOR THE MOST DEMANDING REQUIREMENTS



## ALMiG Kompressoren GmbH

No industrial or trade company can do without compressed air. It is used in such a wide variety of applications that it would be pointless to try to list them all.

To ensure the optimum utilisation of compressed air, it should be dry, clean and, in some cases, oil-free.

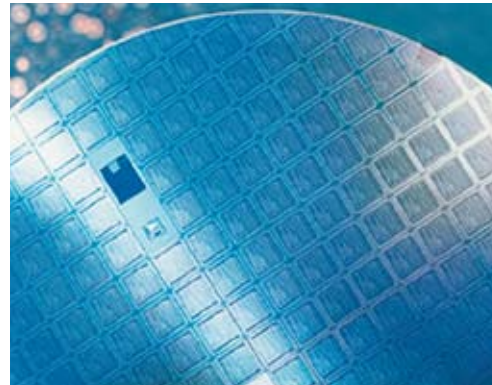
Compressed air treatment is therefore indispensable. However, if treatment is neglected or not

adapted to the individual requirement profile, this has an adverse effect on the entire compressed air system. This can lead to unnecessary production downtimes and shortens the service life of compressed air consumers.

Reason enough to ensure the correctly adjusted quality of compressed air for each individual application.

## Why compressed air treatment

- prevents corrosion, wear and damage in the mains
- improves the economic efficiency of the compressed air system
- prolongs the service life of compressed air consumers
- reduces production costs significantly
- raises the quality of your products
- increases productivity



## CYCLONE SEPARATOR · AS



Type AS	Volumetric flow rate <sup>1</sup> m <sup>3</sup> /h	Connection	Height standard mm	Height premium mm	Width mm	Weight standard kg	Weight premium kg
30	30	3/8"	220	327	90	0.6	1.4
60	60	1/2"	220	327	90	0.6	1.4
180	180	3/4"	280	387	90	0.7	1.5
300	300	1"	305	417	120	1.1	1.9
570	570	1 1/2"	385	497	120	1.3	2.1
990	990	2"	500	612	165	3.6	4.4
1320	1320	2 1/2"	500	612	165	4.7	5.5
2700	2700	3"	710	825	200	6.2	7
2400	2400	DN 100	855	855	410	41	41
3000	3000	DN 125	865	865	450	55	55
6600	6600	DN 150	890	890	520	81	81
7500	7500	DN 175	940	940	600	117	117
12000	12000	DN 200	1025	1025	650	157	157

<sup>1</sup> 7 bars overpressure ( $\Delta p$ ), based on the intake state of the compressor (1 bar, 20°C) | Operating overpressure max.: 16 bars (AS 30 – 2700) · 12 bars (AS 2400 – 12000)

### Cyclone separators remove liquid water from compressed air.

Cyclone separators have been developed for treating compressed air in industrial applications. Thanks to an optimised design, the three-part housing with swirl insert offers low pressure differentials at high flow rates.

Due to the conical shape of the filter housing base, entrainment of separated aerosols can be ruled out. The turbulence-free zone in the lower section of the filter housing prevents condensate from the wet area, which has already been separated, from being carried away with the air flow.

Optionally, cyclone separators with electronic condensate drains are also available in the Premium version

### Equipment features:

- standard version with float-type condensate drain
- premium version includes electronically controlled condensate drain to drain off condensate without any loss of compressed air



# HIGH PERFORMANCE FILTERS

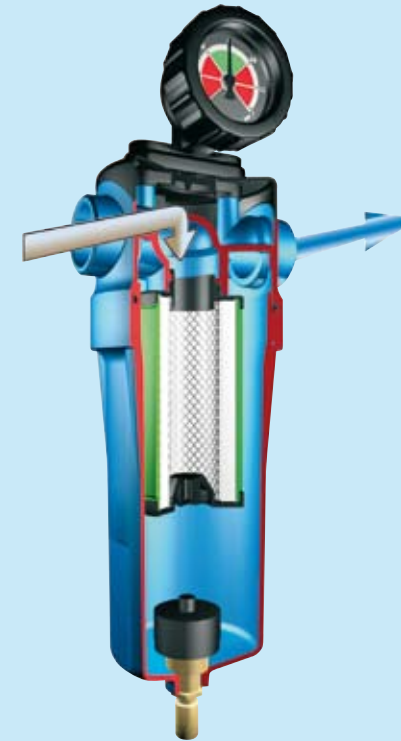
The optimum filter for any requirement profile:

Type of filter	Type	Particle size $\mu\text{m}$	Residual oil content <sup>1</sup>	Residual water content <sup>2</sup> (in liquid form) $\text{mg}/\text{m}^3$
Pre-filter	AFP	5	–	available
Micro-filter	AFM	1	0.1	not available <sup>3</sup>
Submicro-filter	AFS	0.01	0.01	not available <sup>3</sup>
Act. carbon filter	AFC		0.003	not available <sup>3</sup>

<sup>1</sup> with an inlet concentration of  $3 \text{ mg}/\text{m}^3$

<sup>2</sup> details refer to a station without upstream compressed air dryer

<sup>3</sup> the compressed air no longer contains residual water in liquid form; if the temperature is not reduced downstream from the filter elements (air is 100% saturated)



**Compressed air filters ensure the provision of clean air for the most demanding requirements.**

Compressed air filters can be used in a variety of applications. They are deployed wherever compressed air must be clean, dry and free from oil aerosols.

This is an exacting requirement profile considering that  $1 \text{ m}^3$  of compressed air at a final compression pressure of 10 bars can contain more than 2 billion particles and liquid molecules.

The ALMiG high performance filters are optimal to meet these requirements.

## Equipment features:

- standard version, including
  - pressure differential indicator
  - float-type drain trap
- premium version, including
  - pressure differential manometer to indicate the most economically efficient time for changing the filter element
  - electronically controlled condensate drain to remove the condensate without any pressure loss
- three-section housing with bayonet joints for simple replacement and installation of filter elements
- extremely light aluminium housing with threaded connection volumetric flow rates ranging from  $30$  to  $2640 \text{ m}^3/\text{h}$
- alternatively, for volumetric flow rates ranging between  $2700$  and  $10.800 \text{ m}^3/\text{h}$ , a steel housing with flanged connection

# AFP, AFM, AFS, AFC

## Filters with threaded connections

Filter type AFP, AFM, AFS, AFC	Volumetric flow rate		Connec- tion	Standard version <sup>1</sup>			Premium version <sup>2</sup>		
	nom.	max.		Width	Height	Weight	Width	Height	Weight
	m <sup>3</sup> /h	m <sup>3</sup> /h		mm	mm	kg	mm	mm	kg
30	30	37	3/8"	233	90	0.7	392	90	1.5
60	60	75	1/2"	233	90	0.7	392	90	1.5
108	108	135	3/4"	293	90	0.8	452	90	1.6
180	180	225	3/4"	293	90	0.8	452	90	1.6
204	204	255	1"	328	120	1.2	487	120	2
300	300	375	1"	328	120	1.3	487	120	2.1
432	432	540	1 1/2"	408	120	1.4	567	120	2.3
570	570	710	1 1/2"	408	120	1.5	567	120	2.4
750	750	935	2"	523	165	3.8	682	165	4.6
990	990	1235	2"	523	165	3.9	682	165	4.8
1140	1140	1425	2 1/2"	698	165	4.9	857	165	5.7
1320	1320	1650	2 1/2"	698	165	5	857	165	5.8
1680	1680	2100	3"	735	200	6.8	894	200	7.6
2100	2100	2625	3"	888	200	8	1047	200	8.8
2640	2640	3300	3"	1008	200	8.9	1167	200	9.7

all details based on 1 bar (abs), +20°C, 70% r. h.

<sup>1</sup> aluminium housing with threaded connection, including float-type drain trap and pressure differential indicator

<sup>2</sup> aluminium housing with threaded connection, including electronically controlled condensate drain and differential pressure gauge

Operating pressure: 16 bars

Operating temp.: min. +1°C, max. +65°C

## Filters with flanged connections

Filter type AFP, AFM, AFS, AFC	Volumetric flow rate		Connec- tion	Standard version <sup>1</sup>			Premium version <sup>2</sup>		
	nom.	max.		Width	Height	Weight	Width	Height	Weight
	m <sup>3</sup> /h	m <sup>3</sup> /h		mm	mm	kg	mm	mm	kg
2760	2760	3450	DN 100	1126	485	116	1126	485	116
4200	4200	5250	DN 125	1137	630	184	1137	630	184
5700	5700	7125	DN 150	1227	630	197	1227	630	197
7500	7500	9375	DN 150	1261	676	250	1261	676	250
9300	9300	11625	DN 175	1316	712	300	1316	712	300
11000	11000	13750	DN 200	1316	712	300	1316	712	300

all details based on 1 bar (abs), +20°C, 70% r. F.

<sup>1</sup> steel housing with flanged connection, including float drain and pressure differential indicator

<sup>2</sup> steel housing with flanged connection, including electronically controlled condensate drain and pressure differential gauge

Operating pressure: 12 bars

Operating temp.: min. +1°C, max. +60°C

Operating overpressure $\Delta p$ (bars)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Corrective factor $f_{pu}$	0.25	0.36	0.5	0.6	0.7	0.9	1	1.1	1.2	1.4	1.5	1.6	1.75	1.9	2	2.1

### Conversion factors to other operating overpressures

The specified volumetric flow rates refer to a pressure of 7 bars. Volumetric flow rates at different pressures can be calculated using these corrective factors.

### Designed flow rating

The volumetric flow rates through the filter element should be between 50 and 100% of the **nominal** volumetric flow rate. With higher or lower volumetric flow rates, the filtration efficiency deteriorates. The **maximum** volumetric flow rate must not be exceeded.

# COMPRESSED AIR REFRIGERANT DRYERS · ADD



ADD 50  
for wall mounting



ADD 310  
as a stand-alone-version

## Optional versions

Type ADD	Volumetric flow rates m <sup>3</sup> /h	Cooling air requirement m <sup>3</sup> /h	Com-pressed air connection	Power consumption kW	Dimensions			Screw compressor for PLUS version		
					Width mm	Height mm	Depth mm	BELT	DIRECT	VARIABLE
23	23	300	1/2"	0.18	232	610	692	-		
50	50	300	3/4"	0.20	232	610	692	4/5		
69	69	540	3/4"	0.29	232	610	692	7		
96	96	540	3/4"	0.47	232	610	692	11		
140	140	720	1"	0.61	232	610	692	15		
150	150	720	1"	0.61	330	797	790	16	11/15	
204	204	800	1"	0.86	330	797	790	18/22	16/18/22	16/20/24
310	310	2300	1 1/2"	1.04	330	797	790	30/37		28/32/34

Pressure dew point +3°C based on an ambient temperature of +25°C and compressed air inlet temperature of +35°C at 7 bars  
Refrigerant: R 134 a

„PLUS“ version  
with "docked-on" compressed air refrigerant dryer,  
which can also be retrofitted for the following series:  
BELT 4 – 37, DIRECT 11 – 22 and VARIABLE 16 – 34

Betriebsüberdruck p <sub>ü</sub> (bar)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Korrekturfaktor f <sub>pü</sub>	0.6	0.7	0.78	0.86	0.94	1	1.06	1.11	1.15	1.19	1.22	1.24	1.25	1.26	1.26
Umgebungstemp. T <sub>u</sub> (°C)						25	30	35	40						
Korrekturfaktor f <sub>Tu</sub>						1	0.97	0.93	0.88						

## Refrigerant dryers – which can be fitted into any space.

Refrigerant dryers of the ADD series can be used flexibly and for a wide variety of applications

- as stand-alone units
- as wall-mounted units

- or as "dock-on dryer kits" (compressor plus refrigerant dryer)

These refrigerant dryers reduce production costs and increase productivity. An efficient, three-stage heat exchanger system ensures the reliable operation of the dryer up to an inlet temperature of +55°C.

## Conversion factors:

In accordance with DIN ISO 7183 refrigerant dryers are designed for an operating overpressure of 7 bars, an ambient temperature of 25°C and an inlet temperature of 35°C. In the case of other operating overpressures and temperatures the above conversion factors apply.

### Correction factors for cold dryers ALM 25 to ALM 110



Operating overpress. $\Delta p$ (bars)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Corrective factor $f_{pu}$	0.7	0.8	0.87	0.92	0.96	1	1.03	1.05	1.07	1.08	1.1	1.11	1.12	1.13	1.14

Inlet temperature ( $^{\circ}\text{C}$ )	25	30	35	40	45	50	55
Corrective factor $f_{pu}$	1.6	1.24	1	0.82	0.69	0.59	0.5

### Correction factors for cold dryers ALM 150 to ALM 5300



Inlet temperature ( $^{\circ}\text{C}$ )	25	30	35	40	45	50
Inlet pressure $P_a$ (bar)						
3	1.42	1.00	0.79	0.63	0.51	0.43
4	1.50	1.08	0.87	0.72	0.60	0.52
5	1.57	1.13	0.92	0.77	0.65	0.56
6	1.63	1.18	0.96	0.81	0.68	0.60
7	1.67	1.22	1.00	0.84	0.71	0.63
8	1.72	1.25	1.03	0.87	0.74	0.65
9	1.76	1.29	1.07	0.91	0.78	0.67
10	1.81	1.33	1.10	0.93	0.80	0.70
11	1.84	1.36	1.13	0.96	0.82	0.73
12	1.87	1.38	1.16	0.98	0.84	0.75
13	1.90	1.41	1.18	1.00	0.86	0.77
14	1.93	1.44	1.21	1.02	0.88	0.80

Ambient temperature $T_a$ ( $^{\circ}\text{C}$ )	25	30	35	40	45
Corrective factor $f_{pu}$	1	0.94	0.89	0.83	0.78

Type ALM	Volumetric flow rate in compliance with ISO $\text{m}^3/\text{h}$	Cooling air requirement $\text{m}^3/\text{h}$	Compressed air connection	Power consumption kW	Dimensions			
					Width mm	Height mm	Depth mm	Weight kg
25	20	-	3/8"	0.24	384	382	320	15
35	30	-	3/8"	0.24	340	382	320	19
65	60	-	3/4"	0.34	368	568	419	29
85	80	-	3/4"	0.42	368	568	419	29
110	100	-	3/4"	0.58	500	568	525	41
150	140	1020	1"	0.58	393	601	891	50
180	160	1020	1"	0.6	393	601	891	53
260	240	1020	1"	0.87	393	601	951	58
350	315	1980	2"	1.1	483	761	1011	72
400	360	1980	2"	1.3	483	761	1011	78
500	470	2640	2"	1.48	483	761	1011	86
640	580	2640	2"	1.9	533	811	1191	100
740	680	4500	2"	2.45	533	811	1191	112
900	820	4500	2"	2.55	533	811	1291	134
1100	1000	4500	2"	2.7	533	811	1291	155
1320	1200	3500	2 1/2"	2.55	1129	1510	857	314
1530	1400	4400	2 1/2"	2.95	1129	1510	857	327
1850	1700	4500	3"	5.7	1110	1510	857	354
2150	2000	5000	3"	5.8	1110	1510	857	384
2400	2200	6500	DN100	5.5	1243	2116	1386	690
2650	2500	9900	DN100	7	1243	2116	1386	690
3550	3200	9900	DN150	8.7	1400	2112	1584	880
4000	3650	10800	DN150	9.2	1400	2112	1584	880
4900	4600	11400	DN150	10.8	1400	2112	1584	1050
5300	5100	16200	DN150	13.4	1400	2112	1584	1200

Pressure dew point +3 $^{\circ}\text{C}$  based on an ambient temp. of +25 $^{\circ}\text{C}$  and a compressed air inlet temp. of +35 $^{\circ}\text{C}$  at 7 bars  
Refrigerant: R 134 a, R 407 c, R 404 a

### Refrigerant dryers – tried, tested and powerful

The powerful refrigerant dryers of the ALM series are highly efficient quality dryers that have proved their worth a thousand times over.

They are convincing because of high efficiency and reliability at inlet temperatures up to +58 $^{\circ}\text{C}$  and a pressure dew point of +3 $^{\circ}\text{C}$ .

In addition, this series is characterised by particularly large heat exchanger surface areas that guarantee a constant pressure dew point and a high degree of water separation even under extreme operating conditions.

# ADSORPTION DRYER – HEATLESS REGENERATIV · ALM-CCD/ALM-CD



ALM-CCD	Operating overpressure $\Delta p$ (bars)	4	5	6	7	8	9	10							
	Corrective factor $f_p$	0.39	0.56	0.77	1	1.13	1.25	1.38							
	Inlet temperature T (°C)	10	20	30	35	40	45	50							
	Corrective factor $f_T$	1	1	1	1	0.98	0.94	0.88							
ALM-CD	Operating overpressure $\Delta p$ (bars)	4	5	6	7	8	9	10	11	12	13	14	15	16	
	Corrective factor $f_p$	0.78	0.86	0.93	1	1.06	1.12	1.18	1.23	1.28	1.33	1.38	1.43	1.47	
	Inlet temperature T (°C)	10	20	30	35	40	45	50							
	Corrective factor $f_T$	1.33	1.17	1.05	1	0.96	0.92	0.89							

## ALM-CCD/CD heatless regenerativ adsorption dryer

### Key data:

- Pressure dew point:  
ALM-CCD:  $-40^{\circ}\text{C}$ ,  $-70^{\circ}\text{C}$   
ALM-CD:  $-20^{\circ}\text{C}$ ,  $-40^{\circ}\text{C}$ ,  $-70^{\circ}\text{C}$
- Volume flows: 9 – 9400 m<sup>3</sup>/h
- Operating pressure: 3 – 16 bar (overpressure)
- Ambient temperature: 5 – 50°C

The ALM-CCD/CD are used wherever compressed air is being dried to a pressure dew point of  $-20^{\circ}\text{C}$ ,  $-40^{\circ}\text{C}$  or  $-70^{\circ}\text{C}$ . The series offer compact design and simple operation.

Type	Nominal throughput rate inlet <sup>1</sup>	Reg. air flow on average $-40^{\circ}\text{C}$	Dimensions				Connection
			Width	Height	Depth	Weight	
ALM-CCD	m <sup>3</sup> /h	m <sup>3</sup> /h	mm	mm	mm	kg	
10	9	1.8	516	775	157	29	R3/8"
20	17	3.4	516	775	157	37	R3/8"
30	25	5	516	775	157	51	R3/8"
40	35	7	669	775	208	69	R3/8"
50	45	9	669	755	208	71	R1/2"
ALM-CD							
110	100	15	750	1950	750	180	R3/4"
170	160	24	750	1950	750	220	R3/4"
320	300	45	1150	1980	750	400	R1"
430	400	60	1150	1980	750	430	R1 1/2"
650	600	90	1150	1990	750	540	R1 1/2"
800	750	113	1150	1990	750	645	R2"
1000	950	143	1150	2000	750	815	R2"
1200	1150	173	1500	1930	1300	1020	DN80
1600	1450	218	1500	1950	1400	1275	DN80
1900	1750	263	1500	2070	1450	1430	DN80
2300	2100	315	1500	2090	1500	1650	DN80
2600	2450	368	1500	2190	1700	2000	DN80
3000	2800	420	1700	2220	1750	2300	DN80
4000	3700	555	1950	2300	1900	3230	DN100
6200	5800	870	2400	2500	2040	4500	DN100
8000	7500	1125	2690	2610	2300	5750	DN150
10000	9400	1410	2820	2510	2560	6800	DN150

<sup>1</sup> Refers to intake status of 1 bar (abs) and 20°C, 7 bar (overpressure) and 35°C inlet temperature.  
Pressure dew point: ALM-CCD  $-40^{\circ}\text{C}$  at 100%,  $-70^{\circ}\text{C}$  at approx. 85% nominal load;  
ALM-CD  $-20^{\circ}\text{C}$ ,  $-40^{\circ}\text{C}$ ,  $-70^{\circ}\text{C}$  at 100% nominal load  
Operating overpressure: ALM-CCD 3 – 10 bar; ALM-CD 4 – 10 bar, 16 bar version on request

### Advantages:

- Low maintenance costs
- Simple installation/operation
- Compact and space-saving
- Constant pressure dew point
- Guaranteed reliability

### Design:

$V_{\text{nom}} = 2000 \text{ m}^3/\text{h}$   
Inlet temperature = 30°C  
Operating overpressure = 10 bars  
 $V_{\text{corr}} = \frac{V_{\text{nom}}}{f_p \cdot f_T}$   
 $V_{\text{corr}} = \frac{2000 \text{ m}^3/\text{h}}{1.18 \cdot 1.05} = 1615 \text{ m}^3/\text{h}$   
Calculated dryer size:  
ALM-CCD 1900



# ADSORPTION DRYER - HEAT REGENERATIV · ALM-WD



Type ALM-WD	Nominal volumetric flow rate inlet <sup>1</sup>	Dimensions				Connection
		Width	Height	Depth	Weight	
	m <sup>3</sup> /h	mm	mm	mm	kg	
280	245	760	2170	450	290	R1"
450	400	1000	2280	500	435	R1 1/2"
730	653	1050	2620	550	670	R1 1/2"
880	785	1200	2750	600	740	R2"
1200	1026	1250	2750	650	760	R2"
1500	1282	1400	3050	700	1450	DN80
2200	1916	1550	3050	800	1670	DN80
2500	2250	1650	3050	900	1900	DN80
3000	2670	1850	3175	950	2300	DN100
4000	3590	1950	3175	1050	3000	DN100
4800	4280	2000	3175	1100	3300	DN100

<sup>1</sup> Refers to intake status of 1 bar (abs) and 20°C, 7 bar (overpressure) and 35°C inlet temperature.  
 Pressure dew point: -40°C at 100% nominal load, regeneration air requirement: ~2.5% of nominal volume flow  
 Operating overpressure: 4 – 10 bar, 16 bar version on request

Operating overpressure Δp (bars)	4	5	6	7	8	9	10	11	12	13	14	15	16
Corrective factor f <sub>p</sub>	0.63	0.75	0.88	1	1.12	1.15	1.37	on request					
Inlet temperature°C	10	20	30	35	40	45	50						
Corrective factor f <sub>T</sub>	1.00	1.00	1.00	1.00	0.60	0.38	0.25						

### ALM-WD heat-regenerative adsorption dryer

#### Key data:

- Pressure dew point: -40°C at 100% nominal load
- Volume flows: 245 – 4280 m<sup>3</sup>/h
- Operating pressure: 4 – 16 bar (overpressure)

- Ambient temperature: 5 – 50°C

At higher ratings in particular, heat-regenerative adsorption dryers are more efficient and most notably more cost effective to run than cold-regenerative ones.

#### Advantages:

- Ideal positioning of heating elements in drying bed
- Optimum use of regenerative energy
- Low maintenance costs
- Simple installation/operation
- Constant pressure dew point:

#### Design:

V<sub>nom</sub> = 2000 m<sup>3</sup>/h

Inlet temperature = 30°C

Operating overpressure = 10 bars

$$V_{corr} = \frac{V_{nom}}{f_p \cdot f_T}$$

$$V_{corr} = \frac{2000 \text{ m}^3/\text{h}}{1.37 \cdot 1} = 1460 \text{ m}^3/\text{h}$$

Calculated dryer size:

ALM-WD 2200

# ACTIVE CARBON ADSORBER · ALM-AC



Typ ALM-AC	Nominal volumetric flow rate inlet <sup>1</sup> m <sup>3</sup> /h	Dimensions				Connection
		Width mm	Height mm	Depth mm	Weight kg	
75	70	350	1950	750	90	R1/2"
120	110	350	1950	750	110	R3/4"
170	160	350	1970	750	130	R3/4"
220	200	350	1980	750	160	R1"
320	300	550	1980	750	170	R1"
480	450	550	1990	750	215	R1 1/2"
690	650	550	1990	750	260	R1 1/2"
850	800	550	2000	750	330	R2"
1100	1000	899	2210	800	305	DN80
1300	1250	899	2500	800	340	DN80
1700	1600	1019	2380	960	325	DN80
2000	1900	1012	2380	1010	450	DN80
2400	2250	1077	2795	1010	480	DN100
2900	2700	1202	2830	1010	500	DN100
3800	3600	1202	2830	1010	520	DN100
5500	5150	1505	2830	1540	690	DN100
7500	7100	1565	2950	1540	960	DN150
9900	9300	1780	3265	1580	1150	DN150

<sup>1</sup> Refers to intake status of 1 bar (abs) and 20°C, 7 bar (overpressure) and 35°C inlet temperature up to size 850 operating overpressure 5 – 16 bar  
As of size 1100 operating overpressure 5 – 10 bar, 16 bar version on request

Operating overpressure Δp (bars)	5	6	7	8	9	10	11	12	13	14	15	16
Corrective factor $f_p$	0.75	0.88	1	1.06	1.12	1.17	1.22	1.27	1.32	1.37	1.41	1.46
Inlet temperature (°C)	25	30	35	40	45	50	55	60				
Corrective factor $f_T$	3.1	1.7	1	0.57	0.33	0.19	0.11	0.061				

## ALM-AC active carbon adsorber

### Key data:

- Residual oil content:  $\leq 0.003 \text{ mg/m}^3$
- Volume flows: 70 – 9300 m<sup>3</sup>/h
- Operating pressure: 5 – 16 bar (overpressure)
- Ambient temperature: 2 – 45°C

The ALM-AC active carbon adsorber supplies absolutely oil-free, taste- and odour-neutral compressed air and guarantees:

- Freedom from oil with a residual oil content  $\leq 0.003 \text{ mg/m}^3$  through high adsorption of oil vapour. Inlet requirements: DTP +3°C

- Active carbon life of around 10000 operating hours
- Complete operational reliability
- Maximum performance, safety and quality
- Constant efficiency

### Design:

$$V_{\text{nom}} = 200 \text{ m}^3/\text{h}$$

$$\text{Inlet temperature} = 30^\circ\text{C}$$

$$\text{Operating overpressure} = 10 \text{ bars}$$

$$V_{\text{kor}} = \frac{V_{\text{nom}}}{f_p \cdot f_T}$$

$$V_{\text{kor}} = \frac{200 \text{ m}^3/\text{h}}{1.7 \cdot 1.17} = 100.5 \text{ m}^3/\text{h}$$

Calculated dryer size:

ALM-AC 120

## CONDENSATE MANAGEMENT · ALM-D / ALM-WS

Typ ALM-D	Volumetric flow rates			Pressure range	Dimensions				Conne- ction
	Compressor	Dryer	Filter		Width	Height	Depth	Weight	
	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	bar	mm	mm	mm	kg	
180	2.5	5	25	0.8–16	164	118	65	0.8	1/2"
360	5	10	50	0.8–16	179	127	74	1	1/2"
720	10	20	100	0.8–16	211	157	74	1.65	1/2"
2100*	30	60	300	0.8–16	212	162	93	2	1/2"
9000*	130	260	1300	0.8–16	252	180	120	2.9	3/4"

Performance data referred to temperate climate.  
Initial condition: 1 bar (abs); +20°C; 70% rel. humidity  
7 bars; +35°C; 100% rel. humidity

Temperature range:  
Standard: +1°C to +60°C  
\*optional heating: -25°C to +60°C



Typ ALM-WS	Piston compressors max. volumetric flow rate		Screw compressors max. volumetric flow rate		Dimensions			
	Turbine and synthetic oil	VDL oil	Turbine and VCL oil	Synthetic VCL oil	Width	Height	Depth	Weight
120	1.4	1.7	2.4	1.9	290	528	222	3.5
240*	2.8	3.4	4.9	3.8	387	595	254	5.75
360*	4.2	5.1	7.3	5.6	350	719	397	12
660*	8.4	10.1	14.6	11.3	410	892	461	16
1350*	16.9	20.3	29.3	22.5	520	1118	573	32
2700*	33.8	40.5	58.5	45	650	1193	702	42

Temperature range:  
Standard: +5°C to +60°C  
\*optional heating: -5°C to +60°C



### ALM-D condensate drain

The ALM-D are level-regulated, electronically controlled condensate drains which are used wherever effective, reliable and cost-effective condensate discharge is needed.

#### Advantages:

- No loss of pressure
- Drainage according to volumes produced
- No need to adapt to condensate type

- Generous internal drainage cross-sections
  - not sensitive to dirt or condensate containing particles
  - condensate does not tend to emulsify
- CO version for aggressive condensates
- Fully automatic monitoring with LED display
- Zero-wear sensor technology
- Fitted with potential-free contact as standard
- Components of relevance to maintenance easy to access
- 24V or 230V voltage supply

### ALM-WS

#### Oil/water separation systems for environmentally-friendly condensate treatment.

The ALM-WS prepare compressed air condensates with an average oil content of 5% which makes them too environmentally damaging to be discharged in waste water without treatment. Their purpose is to obtain limit values that are in conformity with permissible discharge values.

#### Advantages:

- Operator- and service-friendly
- Simple, rapid filter change
- Waste water test kit included in scope of supply
- Reduced disposal costs
- Level indicator to monitor filter throughput
- Heating can be easily retrofitted at any time
- General building authority approval

## INTELLIGENTE DRUCKLUFT MADE IN GERMANY

### In line with the customer's needs

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 capable of offering solutions to all users of compressed air. That does not only apply to the consultation and installa-

tion phase of your new compressor(s), but naturally continues in all areas of service, maintenance and visualisation.  
**Challenge us!**

Screw compressors 2,2 – 500 kW	Piston compressors 1,5 – 55 kW	Turbocompressors 200 – 2000 kW	Blower 1,5 – 55 kW	Complete accessories	Control, regulate, monitor
<ul style="list-style-type: none"> <li>• Fixed speed</li> <li>• With energy-saving speed control</li> <li>• Oil-free, with water injection</li> <li>• Oil-free, 2-stage</li> </ul> <p>Available drive types:</p> <ul style="list-style-type: none"> <li>• V-belt</li> <li>• Gearbox</li> <li>• Direct</li> </ul>	<ul style="list-style-type: none"> <li>• Oil-lubricated</li> <li>• Oil-free</li> <li>• Normal pressure, medium pressure, high-pressure</li> <li>• Booster</li> <li>• Mobile / stationary</li> </ul> <p>Available drive types:</p> <ul style="list-style-type: none"> <li>• V-belt</li> <li>• Direct</li> </ul>	<ul style="list-style-type: none"> <li>• Oil-free</li> <li>• Radial, 3-stage compression</li> <li>• With / without sound-absorbing housing</li> </ul> <p>Available drive types:</p> <ul style="list-style-type: none"> <li>• Gearbox</li> </ul>	<ul style="list-style-type: none"> <li>• Fixed speed</li> <li>• With energy-saving speed control</li> </ul> <p>Available drive types:</p> <ul style="list-style-type: none"> <li>• V-belt</li> <li>• Direct</li> </ul>	<ul style="list-style-type: none"> <li>• Refrigerant dryers</li> <li>• Desiccant dryers, heatless and heat-regenerative</li> <li>• HOC (heat of compression)</li> <li>• Activated carbon adsorbers</li> <li>• Filters, all particle sizes</li> <li>• Condensate management</li> <li>• Heat recovery systems</li> <li>• Pipework Systems</li> </ul> <p>All components are optimally matched to the compressors</p>	<ul style="list-style-type: none"> <li>• Base load changeover controls</li> <li>• Consumption-related controls</li> <li>• Visualisation (we display your compressed airstation on the PC)</li> <li>• Telemonitoring (the hotline of your compressed air station)</li> </ul>

### Our quality standards mean you can rely on our machines



ISO 9001



ISO 14001



IRIS



Your expert advisor