



Refrigeration dryers

With our refrigeration dryers too, we let you choose between investment cost and lifecycle cost.

Pneumatech's COOL range is our robust, no-frills drying solution, meant for basic condensate removal in your compressed air system. With the AD dryers we guarantee dry air through real-time PDP monitoring, while also reducing power consumption and compressed air losses. Our premium AC dryers optimize the energy consumption based on the actual compressed air demand, through energy saving algorithms or variable speed technology.

Cool 12 - 272 - Non-cycling refrigeration dryers

Features & Benefits

- ▶ Solid performance & strong reliability
 - Stable pressure dew point as low as 5°C/41°F ensuring ISO 8573-1 class 5 quality
- ▶ Compact & easy to install
 - Simple vertical design
 - Plug- and play mechanical & electrical connections
- ▶ Super cost saver
 - Low initial investment
 - Efficient cooling system ensures low energy costs
 - Increased lifetime of tools and equipment
- ▶ Easy maintenance at low cost
 - Long service intervals
 - Easy access to key components

General Specifications

- ▶ Non-cycling refrigeration dryers
- ▶ Operating pressure: 4-16 barg/58-232 psig (4-13 barg/ 58-189 psig from COOL 145 onwards)
- ▶ Max. ambient temperature: 50°C / 122°F
- ▶ Flow rate: 21 to 462 m³/hr (12-272 cfm)⁽¹⁾
- ▶ Pressure dew point: 5°C / 41°F (ISO 8573-1:2010 class 5)
- ▶ Power supply: 230VAC 50 Hz (60Hz version on request)
- ▶ Refrigerant: R134a (COOL 12-106) or R452A (COOL 127-272)



Applications



Pneumatic tools and equipment



Pneumatic control systems



Painting



Injection moulding



Car shops



Tire inflations

¹ Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C .



The compressed air coming out of the compressor is always saturated. Pneumatech's reliable and robust COOL refrigeration dryers are an efficient solution to lower the presence of moisture and the resultant corrosion in your compressed air system. COOL dryers can act as a second line of defence after water separators and aftercoolers giving you a stable dew point as low as 5°C / 41°F, maintaining the ISO 8573-1 class 5 air quality.

Designed to work up to 16 barg/232 psig, COOL dryers deliver stable performance thanks to the efficient refrigerant gas and carefully selected components. The simple vertical design and small foot print make COOL dryers the easy-to-use drying solution in various industrial applications such as car shops, spray painting, injection moulding, tire inflation and many more.

Technical specifications for COOL 12-272 50 Hz													
Pneumatech Variants →	Units	COOL 12	COOL 21	COOL 30	COOL 42	COOL 64	COOL 76	COOL 106	COOL 127	COOL 145	COOL 184	COOL 230	COOL 272
Specifications ↓													
Flow ⁽¹⁾	l/s	5.8	10.0	14.2	20.0	30.4	35.8	50.0	60.0	68.3	86.7	108.3	128.3
	m³/hr	21	36	51	72	110	129	180	216	246	312	390	462
Nominal electric power	kW	0.13	0.13	0.16	0.28	0.32	0.30	0.42	0.66	0.77	1.87	1.03	1.24
Power Supply Voltage / Phase		230/50/1	230/50/1	230/50/1	230/50/1	230/50/1	230/50/1	230/50/1	230/50/1	230/50/1	230/50/1	230/50/1	230/50/1
Max Operating Pressure	barg	16	16	16	16	16	16	16	16	13	13	13	13
	psig	232	232	232	232	232	232	232	232	188	188	188	188
Refrigerant Gas		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R452A	R452A	R452A	R452A	R452A
Inlet and Outlet Connections	G Threads	1/2" F	1/2" F	1/2" F	1/2" F	1/2" F	3/4" F	1" F	1" F	1 1/2" F	1 1/2" F	1 1/2" F	1 1/2" F
Dimensions	L (mm)	233	233	233	233	233	233	233	310	310	310	310	310
	L (inch)	8.8	8.8	8.8	8.8	8.8	8.8	8.8	12.2	12.2	12.2	12.2	12.2
	W (mm)	550	550	550	550	550	550	559	706	706	706	706	706
	W (inch)	22	22	22	22	22	22	22	27.8	27.8	27.8	27.8	27.8
	H (mm)	561	561	561	561	561	561	561	994	994	994	994	994
	H (inch)	22.1	22.1	22.1	22.1	22.1	22.1	22.1	39.1	39.1	39.1	39.1	39.1
Weight	kg	19	19	19	20	25	27	30	52	57	59	80	80
	lb	42	42	42	44	55	59	66	114	125	130	176	176

1.Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C.

Correction factors for ambient temperature					
Ambient temperature	°C	25	30	35	40
	°F	77	86	95	104
Temperature correction factor	Kt (amb)	1	0.92	0.84	0.8

Correction factors for compressed air inlet temperature						
Inlet temperature	°C	30	35	40	45	50
	°F	86	95	104	113	122
Temperature correction factor	Kt	1.24	1	0.8	0.69	0.54

Correction factors for compressed air inlet pressure													
Operating pressure	barg	5	6	7	8	9	10	11	12	13	14	15	16
	psig	73	87	101	116	131	145	159	174	188	203	218	232
Pressure correction factor	Kp	0.9	0.96	1	1.03	1.06	1.08	1.1	1.12	1.13	1.15	1.16	1.17

AD 10 - 3000 - Non-cycling refrigeration dryers

General specifications

- ▶ Non-cycling refrigeration dryers
- ▶ Operating Pressure:
 - AD10 - 50: 4-16 barg / 60-232 psig
 - AD75 - 3000: 4-13 barg/60-188 psig
- ▶ Max. inlet temperature: 55°C / 113°F
- ▶ Flow rate: 21 - 5040 m³/hr / 12-2966 cfm⁽¹⁾
- ▶ Pressure dew point: 3°C / 37°F (ISO 8573 - 1:2010 class 4)
- ▶ Power supply:
 - AD10 - 250: 230VAC 50/60 Hz
 - AD300 - 3000: 400V/50Hz; 380V/60Hz; 460V/60Hz
- ▶ Refrigerant: R134a (AD10 - 50); R410A (AD125 - 1250) & R452A (AD75 - 100 & AD1600 - 3000)

Refrigeration Dryers: AD Series (10-3000) Non cycling

AD 10-50	AD 75-100
	
Features & Benefits	Features & Benefits
• Stable performance and guaranteed dew point of 3°C/37°F • Ingeniously designed components to ensure maximum performance • Hot gas bypass valve to prevent freezing at lower loads • Zero-loss electronic drain to prevent loss of valuable compressed air • Brazed plate heat exchanger with integrated water separator and air-to-air heat exchange • R134a refrigerant gas: low global warming impact, zero ozone depletion • Digital display with real-time PDP monitoring • Easy plug-and-play installation	• Stable performance and guaranteed dew point of 3°C/37°F • Ingeniously designed components to ensure maximum performance • Hot gas bypass valve to prevent freezing at lower loads • Zero-loss electronic drain to prevent loss of valuable compressed air • Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange • Environmental safe refrigerant gases R452A • Digital display with real-time PDP monitoring • Easy plug-and-play installation

¹ Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C.

Pneumatech's AD 10-3000 non-cycling refrigeration dryers are designed to protect your compressed air system by lowering the presence of moisture in the compressed air. With a stable dew point as low as 3°C/37°F these dryers provide a highly efficient and reliable solution for your drying needs. Thanks to the new controller with digital display, real time PDP monitoring is possible. The zero-loss electronic drains avoid compressed air losses. The well-designed heat exchangers ensure maximum cooling efficiency, making the AD dryers a genuine air drying solution in industrial applications.

The AD125-1250 range is equipped with the winning combination: rotary compressors and R410A refrigerant. This combination is up to 30% more energy efficient, requires 19% less refrigerant gas and is 100% compliant with European regulation EU No 517 / 2014, hereby significantly reducing the ecological footprint of these dryers. Rotary compressors are moreover very reliable thanks to the low vibration levels and limited mechanical load. R410A guarantees stable evaporation, which makes the pressure dew point of 3°C /37°F possible.

AD 125-250	AD 300-1250	AD1600 - 3000
		
Features & Benefits	Features & Benefits	Features & Benefits
• Stable performance and guaranteed dew point of 3°C/37°F • Rotary compressors and R410A refrigerant: the winning combination • 30% more energy efficient • Requires 19% less refrigerant gas • Extremely reliable: low vibration levels and limited mechanical load • Ingeniously designed components to ensure maximum performance • Hot gas bypass valve to prevent freezing at lower loads • Zero-loss electronic drain to prevent loss of valuable compressed air • Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange • Digital display with real-time PDP monitoring and voltage-free contact for remote alarm • Easy plug-and-play installation	• Stable performance and guaranteed dew point of 3°C/37°F • Rotary compressors and R410A refrigerant: the winning combination • 30% more energy efficient • Requires 19% less refrigerant gas • Extremely reliable: low vibration levels and limited mechanical load • Ingeniously designed components to ensure maximum performance • Hot gas bypass valve to prevent freezing at lower loads • Zero-loss electronic drain to prevent loss of valuable compressed air • Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange • Advanced controlling and monitoring thanks to the controller installed • Digital PDP display • Remote start/stop • Voltage-free contact for general alarm • Easy plug-and-play installation	• Stable performance and guaranteed dew point of 3°C/37°F • Ingeniously designed components to ensure maximum performance • Hot gas bypass valve to prevent freezing at lower loads • Zero-loss electronic drain to prevent loss of valuable compressed air • Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange • Environmental safe refrigerant gases R452A • Advanced controlling and monitoring • Digital PDP display • Remote start/stop • Voltage-free contact for general alarm • Easy plug-and-play installation

Options



Filter Support



Bypass Valve

AD 10 - 3000 - Non-cycling refrigeration dryers

Technical specifications for AD 10-3000 50Hz																									
Pneumatech Variants → Specifications ↓		AD 10	AD 15	AD 25	AD 35	AD 50	AD 75	AD 100	AD 125	AD 150	AD 175	AD 200	AD 250	AD 300	AD 360	AD 500	AD 600	AD 750	AD 1000	AD 1250	AD 1600	AD 1800	AD 2500	AD 3000	
Flow ⁽¹⁾	l/s	6	10	14	20	31	39	50	60	68	87	108	128	167	200	250	300	400	500	583	750	833	1167	1400	
	m³/hr	21	36	51	72	110	141	180	216	246	312	390	462	600	720	900	1080	1440	1800	2100	2700	3000	4200	5040	
Nominal electric power	kW	0.13	0.16	0.19	0.27	0.28	0.61	0.67	0.65	0.66	0.83	1.01	1.09	1.32	1.63	1.89	2.11	3.26	3.89	4.75	6.71	6.80	10.20	12.30	
Power Supply / Voltage / Phase		230 50 1	230 50 1	230 50 1	230 50 1	230 50 1	230 50 1	230 50 1	230 50 1	230 50 1	230 50 1	230 50 1	230 50 1	400 50 3	400 50 3	400 50 3	400 50 3	400 50 3	400 50 3	400 50 3	400 50 3	400 50 3	400 50 3	400 50 3	
Max Operating Pressure	barg	16	16	16	16	16	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	
	psig	232	232	232	232	232	188	188	188	188	188	188	188	188	188	188	188	188	188	188	188	188	188	188	
Refrigerant Gas		R134a	R134a	R134a	R134a	R134a	R452A	R452A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R452A	R452A	R452A	R452A	
Inlet and Outlet Connections	inches / DIN	R3/4"	R3/4"	R3/4"	R3/4"	R3/4"	R1"	R1"	R1 1/2"	R1 1/2"	R1 1/2"	R1 1/2"	R1 1/2"	R2"	R2"	R2"	R2"	R3"	R3"	R3"	DIN 125	DIN 125	DIN 125	DIN 125	
Dimensions	L (mm)	350	350	350	350	350	370	370	460	460	460	580	580	735	735	735	735	1020	1020	1020	1020	1020	1020	1020	
	L (inch)	13.8	13.8	13.8	13.8	13.8	16.6	16.6	18.1	18.1	18.1	22.8	22.8	28.9	28.9	28.9	28.9	40.2	40.2	40.2	40.2	40.2	40.2	40.2	
	W (mm)	511	511	511	511	511	515	515	575	575	575	604	604	952	952	952	952	1082	1082	1082	1123	2099	2099	2099	
	W (inch)	20.1	20.1	20.1	20.1	20.1	20.3	20.3	22.6	22.6	22.6	23.8	23.8	37.5	37.5	37.5	37.5	42.6	42.6	42.6	44.2	42.6	42.6	42.6	
	H (mm)	484	484	484	484	484	764	764	789	789	789	899	899	1012	1012	1012	1012	1535	1535	1535	1551	1560	1560	1560	
	H (inch)	19.1	19.1	19.1	19.1	19.1	30	30	31.1	31.1	31.1	35.4	35.4	39.8	39.8	39.8	39.8	60.4	60.4	60.4	61.1	61.4	61.4	61.4	
Weight	kg	19	19	20	25	27	44	44	53	60	65	80	80	128	146	158	165	325	335	350	380	550	600	650	
	Lbs	42	42	44	55	60	97	97	117	132	143	176	176	282	322	348	364	716	738	771	838	1212	1322	1433	

1. Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C .
2. 380V/60Hz and 460V/60Hz variants are also available for the AD300-3000 range. Please refer to the datasheets or consult Pneumatech for technical data.

Correction factors for ambient temperature							
Ambient temperature	°C	25	30	35	40	45	
	Ktmb	1.00	0.92	0.84	0.80	0.74	(AD 10-250)
		1.00	0.91	0.81	0.72	0.62	(AD 300-3000)

Correction factors for compressed air inlet temperature							
Inlet temperature	°C	30	35	40	45	50	55
	Kt	1.24	1.00	0.82	0.69	0.58	0.45
		1.00	1.00	0.82	0.69	0.58	0.49

Correction factors for compressed air inlet pressure															
Operating pressure	barg	4	5	6	7	8	9	10	11	12	13	14	15	16	
	Kp	0.80	0.90	0.96	1.00	1.03	1.06	1.08	1.10	1.12	1.13	1.15	1.16	1.15	(AD 10-250)
		0.80	0.90	0.97	1.00	1.03	1.05	1.07	1.09	1.11	1.12	-	-	-	(AD 300-3000)

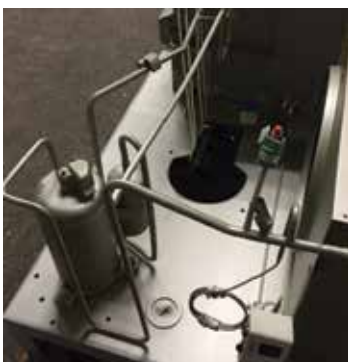
Anti-corrosion treatment (available for all refrigerant dryers)

Technical specifications

Coating type	Aluminum pigmented polyurethane
Color	Champagne
Pretreatment	Degreasing
Temperature Range (dry)	-20 to 150°C (-4° to 302°F)
Substrates	Aluminum and Copper
ASTM B117	4000+ hours(neutral-salt spray test)
Kesternich (2.0 ltr SO ₂)	80 cycles
Layer Thickness	25-30 µm (1 mil)
UV Resistance	Excellent
Adhesion (cross hatch)	0 (European) 5b (USA)
Chemical Resistance	Excellent

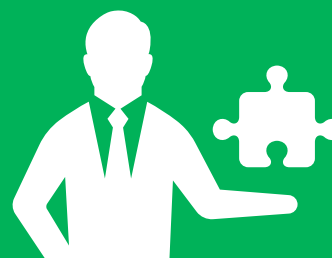
Coating resistance of some typical corrosive gas vapors (based on exposure temperature of 20°C/68°F) – maximum concentrations

Chlorine	64 ppm	Ethanol	320 ppm
Ammonia	160 ppm	Sulphuric acid	320 ppm
Phosphoric acid	320 ppm	Seawater	640 ppm



Problem

Refrigerant dryers can be subjected to severe corrosion when placed in environments rich of e.g ammonia and sulfurs, or close to the seaside. In these cases incompatible metals like copper will be affected since the condenser-fan is blowing a high volume of polluted air through the dryer. Corrosion and pollution of condensers will directly impact the dryer performance. Corrosion can even lead to leaks in the condenser and refrigeration piping.



Solution

Pneumatech offers a long-lasting corrosion protection to the condenser and the refrigerant piping without affecting heat transfer and pressure drop. The heat conductive pigmentation in the coating is oriented in such a way that it creates a very high chemical resistance at a low layer thickness. Therefore it is considered the best available option to prevent refrigeration dryer failure and unnecessary energy consumption.

AC 15 - 600 - Cycling refrigeration dryers

Features & Benefits

- ▶ Premium energy efficiency
 - Energy-saving & flow control: adapt energy consumption to the real load
 - Lowest pressure drop over heat exchanger and air piping
 - Zero-loss drains
- ▶ Strong performance & reliability
 - Stable pressure dew point as low as 3°C
 - Guaranteed drying performance in wide range of ambient temperatures
- ▶ Optimal control and monitoring
 - Energy-saving control
 - Voltage-free contact for remote alarm
 - Auto-restart after voltage-failure
 - Communication via industrial protocols like Modbus, Profibus or Ethernet/IP (for AC250-600 only)
- ▶ Easy installation and maintenance at low cost
 - Pipe connections on top
 - Long service intervals
 - Easy access to key components



General Specifications

- ▶ AC refrigeration dryers: cycling type
- ▶ Operating pressure: 4-16 barg/58-232 psig (4-14 barg/ 58-189 psig from AC 125 onwards)
- ▶ Max. inlet temperature: 60°C / 140°F
- ▶ Flow rate : 22-1026 m³/hr (13-604 cfm)⁽¹⁾
- ▶ Pressure dew point: 3°C / 37°F (ISO 8573-1:2010 class 4)
- ▶ Power supply: 115/230VAC 50/60 Hz
- ▶ Refrigerant: R134a (AC 15-100), R410a (AC 125-600)

Options



Integrated high efficiency line filters



Electric panel protection IP 54

¹ Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C .

Pneumatech's AC range offers premium refrigeration drying technology at the lowest operational costs. All AC dryers are equipped with our proprietary energy saving algorithm, which adapts the energy consumption to the real load by continuously monitoring the ambient temperature and the pressure dewpoint. In this way, the risk of downstream corrosion is reduced to zero at all times. When there is less cooling needed, the refrigerant compressor stops and power consumption is significantly reduced, with savings up to 50%.

AC250-600 dryers are also equipped with a flow switch which detects whether there is flow going through the dryer; and shuts down the refrigerant compressor when there is no flow

(even if the energy saving algorithm would not be activated). To make these energy saving functionalities work, the AC range makes use of advanced controllers, which communicate through voltage-free contacts (for AC15-200) or industrial protocols like Modbus, Profibus or Ethernet/IP (for AC250-600).

Premium energy efficiency is also guaranteed thanks to low pressure drops over the heat exchangers, zero-loss drains and our winning combination: rotary compressors and R410A refrigerant on AC125-600. This combination is up to 30% more energy efficient, requires 19% less refrigerant gas and is 100% compliant with European regulation EU No 517 / 2014.

Technical specifications for AC 15-600 50Hz Aircooled																		
Pneumatech Variant → Specifications ↓	Units	AC-15	AC-20	AC-30	AC-40	AC-50	AC-65	AC-85	AC-100	AC-125	AC-150	AC-200	AC-250	AC-300	AC-350	AC-450	AC-500	AC-600
Flow ⁽¹⁾	l/s	6	10	15	20	25	30	40	50	60	70	95	120	150	185	220	245	285
	m³/hr	22	36	54	72	90	108	144	180	216	252	342	432	540	666	792	882	1026
Power consumption	kW	0.2	0.2	0.33	0.41	0.41	0.41	0.6	0.5	0.7	0.7	0.89	1	1	1.4	1.9	1.9	2.2
	hp	0.27	0.27	0.44	0.55	0.55	0.55	0.80	0.67	0.94	0.94	1.19	1.34	1.34	1.88	2.55	2.55	2.95
Pressure drop over dryer	barg	0.07	0.11	0.12	0.12	0.17	0.25	0.2	0.2	0.21	0.28	0.25	0.11	0.15	0.22	0.12	0.18	0.22
	psig	1.02	1.60	1.74	1.74	2.47	3.63	2.90	2.90	3.05	4.06	3.63	1.59	2.18	3.19	1.74	2.61	3.19
Refrigerant type		R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Dimensions	L (mm)	496	496	496	496	496	496	716	716	792	792	792	882	882	948	948	948	948
	L (inch)	19.5	19.5	19.5	19.5	19.5	19.5	28.2	28.2	31.2	31.2	31.2	34.7	34.7	37.3	37.3	37.3	37.3
	W (mm)	377	377	377	377	377	377	380	380	500	500	500	661	661	802	802	802	802
	W (inch)	14.8	14.8	14.8	14.8	14.8	14.8	15.0	15.0	19.7	19.7	19.7	26.0	26.0	31.6	31.6	31.6	31.6
	H (mm)	461	461	461	461	461	461	676	676	680	680	680	1015	1015	1026	1026	1026	1026
	H (inch)	18.1	18.1	18.1	18.1	18.1	18.1	26.6	26.6	26.8	26.8	26.8	40.0	40.0	40.4	40.4	40.4	40.4
Inlet and Outlet Connections		ISO7-R3/4"(m)	ISO7-R3/4"(m)	ISO7-R3/4"(m)	ISO7-R3/4"(m)	ISO7-R3/4"(m)	ISO7-R3/4"(m)	ISO7-R1"(m)	ISO7-R1"(m)	ISO7-R1"(m)	ISO7-R1"(m)	ISO7-R1"(m)	ISO7-R1 1/2"(m)	ISO7-R1 1/2"(m)	ISO7-R2 1/2"(m)	ISO7-R2 1/2"(m)	ISO7-R2 1/2"(m)	ISO7-R2 1/2"(m)
Weight	kg	27	27	32	34	34	34	56	57	82.4	82.4	109.4	170	170	185	197	197	197
	lbs	60	60	71	75	75	75	123	126	182	182	241	375	375	408	434	434	434

1. Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C .

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP) - 50Hz units										
Temperature	°C	25	30	35	40	45	50	55	60	
	°F	77	86	95	104	113	122	131	140	
PDP	3°C	37°F	1,2	1,1	1	0,85	0,72	0,6	0,49	0,37
	5°C	41°F	1,35	1,23	1,11	0,94	0,8	0,67	0,55	0,42
	7°C	45°F	1,5	1,35	1,22	1,02	0,88	0,75	0,61	0,47
	10°C	50°F	1,72	1,54	1,38	1,15	1	0,86	0,7	0,54
	15°C	59°F	2,11	1,89	1,68	1,43	1,23	1,03	0,83	0,62

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP) - 60Hz units										
Temperature	°C	25	30	35	38	45	50	55	60	
	°F	77	86	95	100	113	122	131	140	
PDP	4°C	39°F	1,14	1,09	1,03	1	0,8	0,67	0,53	0,4
	7°C	45°F	1,27	1,22	1,14	1,09	0,88	0,74	0,59	0,44
	10°C	50°F	1,4	1,35	1,24	1,18	0,96	0,8	0,65	0,49
	15°C	59°F	1,63	1,55	1,41	1,32	1,08	0,91	0,74	0,56

K2 Flow correction factors due to compressed air inlet pressure (g)										
Air inlet pressure	barg	4	5	6	7	8	10	12	14	16
	psig	58	72	87	101	116	145	174	203	232
		0,74	0,84	0,92	1	1,05	1,15	1,25	1,31	1,35

Flow correction factor due to ambient temperature - 50Hz units							
Temperature	°C	25	30	35	40	45	50
	°F	77	86	95	104	113	122
		1,00	0,95	0,88	0,81	0,74	0,67

Flow correction factor due to ambient temperature - 60Hz units							
Temperature	°C	25	30	35	38	45	50
	°F	77	86	95	100	113	122
		1,10	1,06	1,02	1,00	0,93	0,88

AC 650 - 2100 - Large cycling refrigeration dryers (including VSD solutions)

Features & Benefits

- ▶ Premium energy efficiency
 - Energy-saving & flow control: adapt energy consumption to the real load
 - Variable speed range: exact match between energy consumption and actual demand (available for AC 1600-2100)
 - Lowest pressure drop over heat exchanger and air piping
 - Zero-loss drains
- ▶ Strong performance & reliability
 - Stable pressure dew point as low as 3°C
 - Rotary refrigerant compressors: limited mechanical load & low vibrations
 - Guaranteed drying performance in wide range of ambient temperatures
 - Refrigeration cycle optimized in all conditions thanks to automatic expansion valve & electronic hot gas bypass valve
- ▶ Air-cooled as well as water-cooled versions available
- ▶ Optimal control and monitoring thanks to the Purelogic™ controller
 - Communication via industrial protocols like Modbus, Profibus or Ethernet/IP
 - Internet-based visualization
- ▶ Easy maintenance at low cost
 - Pipe connections on top
 - Long service intervals
 - Easy access to key components

General Specifications

- ▶ AC refrigeration dryers: cycling type including VSD option (only for AC 1600-2100)
- ▶ Operating Pressure: 4-14 barg/ 58-189 psig
- ▶ Max. temperature: 50°C / 122°F
- ▶ Flow rate: 1116-3636 m³/hr (657-2141 cfm)⁽¹⁾
- ▶ Pressure dew point: 3°C / 37°F
- ▶ Power supply: 400V/50Hz; 380V/60Hz; 400-460V/60Hz
- ▶ Refrigerant: R410a
- ▶ Cooling type: Air-cooled and water-cooled



Options



IP 54 protection
(only for 650-1050;
standard on AC1250-2100)

¹ Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C .



AC 650-2100 is Pneumatech's premium refrigeration dryer range at higher flows: from 1120 up to 3636 m³/hr (657-2141 cfm).

As in the small AC range, operating costs are significantly reduced thanks to the energy saving and flow switch algorithms, the zero-loss drains, the low pressure drop over the heat exchangers and the combination of rotary compressors and R410A refrigerant. The refrigeration cycle is further optimized in all working conditions by making use of the automatic expansion valve & electronic hot gas bypass valve.

From AC1600 onwards, dedicated variable speed (VSD) variants have been added to the range. The VSD controller incorporated

in these dryers matches the energy consumption to the actual compressed air demand. This reduces energy used by as much as 70%, compared to conventional dryers. It works by varying the speed of the compressor, hereby ensuring a stable dew point.

The Purelogic™ is installed as standard on all dryers: it ensures maximum reliability by monitoring the most important parameters of the dryer and offers impressive control and monitoring capabilities, like internet-based visualization.

The entire range is available in both air-cooled and water-cooled versions.

Technical specifications for AC650-2100

Air Cooled (including VSD)												Water Cooled (including VSD)									
Pneumatech Variants → Specifications ↓	Units	AC 650	AC 850	AC 1050	AC 1250	AC 1600	AC 1600 VSD	AC 1800	AC 1800 VSD	AC 2100	AC 2100 VSD	AC 650	AC 850	AC 1050	AC 1250	AC 1600	AC 1600 VSD	AC 1800	AC 1800 VSD	AC 2100	AC 2100 VSD
Flow ⁽¹⁾	l/s	310	410	510	610	760	760	870	870	1010	1010	310	410	510	610	760	760	870	870	1010	1010
	m³/hr	1116	1476	1836	2196	2736	2736	3132	3132	3636	3636	1116	1476	1837	2196	2736	2736	3132	3132	3636	3636
Power consumption	kW	2.80	3	4.5	4.80	5.30	5.30	6.60	5.8	7.40	6.6	2	2.4	4.1	3.10	3.60	3.3	4.50	4.2	5.10	5.6
	hp	3.75	4.02	6.03	6.40	7.10	7.10	8.80	7.8	9.90	8.8	2.68	3.22	5.5	4.20	4.80	4.4	6.00	5.6	6.80	7.5
Pressure drop over dryer	mBar	230	210	200	170	170	170	140	140	170	170	230	210	200	170	170	90	140	120	170	170
	psig	3.3	3.0	2.9	2.5	2.5	2.5	2.0	2.0	2.5	2.5	3.3	3	2.9	2.5	2.5	131	2.0	174	2.5	2.5
Refrigerant type	kg	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a
Inlet and Outlet Connections	Inch/DN	G3"	G3"	G3"	DN100	DN100	DN100	DN150	DN150	DN150	DN150	G3"	G3"	G3"	DN100	DN100	DN100	DN150	DN150	DN150	DN150
Dimensions	L (mm)	986	1250	1525	1040	1245	1245	1245	1245	1580	1580	986	1250	1250	1245	1245	1580	1245	1580	1245	1580
	L (inch)	38.9	49.2	60.0	40.9	49.0	49.0	49.0	49.0	62.2	62.2	38.9	49.2	49.2	49.0	49.0	62.2	49.0	62.2	49.0	62.2
	W (mm)	850	850	850	1060	1060	1060	1060	1060	1060	1060	850	850	850	1060	1060	1060	1060	1060	1060	1060
	W (inch)	33.5	33.5	33.5	41.7	41.7	41.7	41.7	41.7	41.7	41.7	33.5	33.5	33.5	41.7	41.7	41.7	41.7	41.7	41.7	41.7
	H (mm)	1190	1375	1375	1580	1580	1580	1580	1580	1580	1580	1190	1375	1375	1580	1580	1580	1580	1580	1580	1580
	H (inch)	46.9	54.1	54.1	62.2	62.2	62.2	62.2	62.2	62.2	62.2	46.9	54.1	54.1	62.2	62.2	62.2	62.2	62.2	62.2	62.2
Weight	kg	200	240	310	320	380	380	400	400	460	460	180	240	260	350	360	410	370	410	380	410
	lbs	441	529	683	705	838	838	882	882	1014	1014	397	529	573	772	794	904	816	904	838	904

1. Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C.

2. Power consumption of the units are specified for max ambient temperature of 40°C. In case of higher ambient temperatures contact Pneumatech.

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP)- 50Hz units										
Temperature	°C	25	30	35	40	45	50	55	60	
	°F	77	86	95	104	113	122	131	140	
PDP	3°C	37°F	1,2	1,1	1	0,85	0,72	0,6	0,49	0,37
	5°C	41°F	1,35	1,23	1,11	0,94	0,8	0,67	0,55	0,42
	7°C	45°F	1,5	1,35	1,22	1,02	0,88	0,75	0,61	0,47
	10°C	50°F	1,72	1,54	1,38	1,15	1	0,86	0,7	0,54
	15°C	59°F	2,11	1,89	1,68	1,43	1,23	1,03	0,83	0,62

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP)- 60Hz units										
Temperature	°C	25	30	35	38	45	50	55	60	
	°F	77	86	95	100	113	122	131	140	
PDP	4°C	39°F	1,14	1,09	1,03	1	0,8	0,67	0,53	0,4
	7°C	45°F	1,27	1,22	1,14	1,09	0,88	0,74	0,59	0,44
	10°C	50°F	1,4	1,35	1,24	1,18	0,96	0,8	0,65	0,49
	15°C	59°F	1,63	1,55	1,41	1,32	1,08	0,91	0,74	0,56

K2 Flow correction factor due to compressed air inlet pressure (g)										
Air inlet pressure	barg	4	5	6	7	8	10	12	14	
	psig	58	72	87	101	116	145	174	203	
		0,74	0,84	0,92	1	1,05	1,15	1,25	1,31	

Flow correction factor due to ambient temperature or cooling water temperature - 50Hz units							
Temperature	°C	25	30	35	40	45	50
	°F	77	86	95	104	113	122
		1,00	0,95	0,88	0,81	0,74	0,67

Flow correction factor due to ambient temperature or cooling water temperature - 60Hz units							
Temperature	°C	25	30	35	38	45	50
	°F	77	86	95	100	113	122
		1,10	1,06	1,02	1,00	0,93	0,88

AC HP 20 - 2120 - High-pressure refrigeration dryers

Features & Benefits

- ▶ Unique, mono block heat exchanger
 - Heavy duty steel construction makes heat exchangers reliable and long lasting for high pressure applications
 - Specially designed louvered copper plates to deliver state-of-art performance and great cooling efficiency
 - Compact design
- ▶ Premium energy efficiency
 - Low pressure drops resulting in energy cost savings
 - Air/air economizer reduces the energy requirements by 58 %
- ▶ Efficient integrated water separator
 - Prevents re-evaporation of water after separation
 - Guaranteed separation up to 150% of the nominal flow
- ▶ Reliable and safe operation thanks to carefully chosen regulation instruments
 - Thermostatic expansion valve eliminates risk of liquid knock in the refrigerant compressor
 - Hot gas bypass valve keeps evaporation pressure steady
 - Thermo and pressure switches guarantee reliable and efficient working

General Specifications

- ▶ High pressure refrigeration dryers
- ▶ Max. pressure: 50 barg / 725 psig
Pressure up to 350 barg / 5075 psig available on request
- ▶ Max. temperature: 45°C / 113°F
- ▶ Flow rate: 33 to 3600 m³/hr (19-2120 cfm)⁽¹⁾
- ▶ Pressure dew point: 3°C/37°F (ISO 8573-1:2010 class 4)
- ▶ Power supply: 230/400VAC 50Hz (60Hz version on request)
- ▶ Refrigerant: R134a (ACHP 20-1100) or R404a (ACHP 1360-2120)
- ▶ Cooling variants: Air-cooled (standard) or water-cooled (option)



Options



**Water cooled
condenser**



**Potential contact
Thermostatic warning**

¹ Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C .



Pneumatech offers an extensive standard range of high-pressure refrigeration dryers (AC HP 20-2120) for applications up to 50 barg / 725 psig. Higher pressures are available on request. We make the difference through our state-of-the-art mono block heat exchanger with its heavy-duty steel construction and specially designed louvered copper plates, resulting in robustness and excellent cooling efficiency.

Offered in both air- and water-cooled variants, the AC HP covers

a flow range from 33 m³/hr (19 cfm) up to 3600 m³/hr (2120 cfm). The refrigeration cycle is optimized in all conditions thanks to the use of rigorously chosen control and regulating instruments such as thermostatic expansion valves, thermal switches and pressure transmitters.

AC HP dryers are the most cost-effective solutions for high pressure applications, and are typically used in bottling plants, mining and textile industry, and for water jet cutting and blasting.

Technical specifications for AC HP 20-2120

Pneumatech Variants → Specifications ↓	Units	ACHP 20	ACHP 25	ACHP 30	ACHP 50	ACHP 80	ACHP 110	ACHP 130	ACHP 150	ACHP 210	ACHP 240	ACHP 270	ACHP 340	ACHP 415	ACHP 530	ACHP 675	ACHP 770	ACHP 970	ACHP 1100	ACHP 1360	ACHP 1440	ACHP 1725	ACHP 2120
Flow ⁽¹⁾	l/s	9.2	10.6	15.0	24.2	37.5	52.8	60.6	71.1	98.6	114.4	128.1	160.3	195.8	251.1	319.2	362.5	457.8	520.3	641.4	678.9	814.4	1000.0
	m³/hr	33	38	54	87	135	190	218	256	355	412	461	577	705	904	1149	1305	1648	1873	2309	2444	2932	3600
Power consumption	kW	0.22	0.24	0.25	0.25	0.31	0.52	0.6	0.72	0.97	1.16	0.97	1.16	1.6	1.6	2.1	2.1	2.7	3.4	4.3	4.7	5.2	8.9
	hp	0.30	0.32	0.34	0.34	0.42	0.70	0.80	0.97	1.30	1.56	1.30	1.56	2.15	2.15	2.82	2.82	3.62	4.56	5.77	6.30	6.97	11.94
Pressure Drop	mBar	20	85	140	15	30	40	50	40	60	80	90	90	130	50	100	60	80	100	100	120	120	200
	psig	0.29	1.23	2.03	0.22	0.44	0.58	0.73	0.58	0.87	1.16	1.31	1.31	1.89	0.73	1.45	0.87	1.16	1.45	1.45	1.74	1.74	2.90
Refrigerant type	-	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A	R134A
In/Out Connection	BSP	3/8"	3/8"	3/8"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	DN50	DN50	DN50	DN50	DN50	DN50	DN50	DN50
Length	mm	500	500	500	676	676	676	676	675	675	675	700	700	700	700	700	700	1190	1190	1190	1190	1190	1208
	inch	19.7	19.7	19.7	26.6	26.6	26.6	26.6	26.6	26.6	26.6	27.6	27.6	27.6	27.6	27.6	27.6	46.9	46.9	46.9	46.9	46.9	47.6
Width	mm	360	360	360	405	405	405	405	485	485	485	752	800	800	800	800	800	1000	1000	1000	1000	1000	1800
	inch	14.2	14.2	14.2	15.9	15.9	15.9	15.9	19.1	19.1	19.1	29.6	31.5	31.5	31.5	31.5	31.5	39.4	39.4	39.4	39.4	39.4	70.9
Height	mm	460	460	460	495	495	495	495	710	710	710	1100	1320	1320	1320	1455	1455	1455	1455	1455	1455	1455	1120
	inch	18.1	18.1	18.1	19.5	19.5	19.5	19.5	28.0	28.0	28.0	43.3	52.0	52.0	52.0	57.3	57.3	57.3	57.3	57.3	57.3	57.3	44.1
Weight with box	Kg	30	30	30	45	50	58	60	70	80	90	130	160	190	195	285	355	455	465	505	530	565	645
	Lbs	66.1	66.1	66.1	99.2	110.2	127.9	132.3	154.3	176.4	198.4	286.6	352.7	418.9	429.9	628.3	782.6	1003.1	1025.1	1113.3	1168.4	1245.6	1422.0

1. Flow is measured at reference conditions: 1 bara and 20°C at operating pressure of 45 barg, inlet temperature 35°C .

Correction Factors Inlet Pressure							
barg	20	25	30	35	40	45	50
psig	290	363	435	508	580	653	725
Kb	0.84	0.91	0.93	0.97	0.98	1	1.02

Correction Factors Inlet temperature							
°C	30	35	40	45	50	55	60
°F	86	95	104	113	122	131	140
Kt	1.2	1	0.85	0.72	0.63	0.55	0.49

Correction Factors Ambient temperature for R134a						
°C	20	25	30	35	40	45
°F	68	77	86	95	104	113
Kt	1.08	1	0.92	0.84	0.77	0.65

Correction Factors Ambient temperature for 404a						
°C	20	25	30	35	40	45
°F	68	77	86	95	104	113
Kt	1.06	1	0.9	0.81	0.73	0.6

Do not ‘over-dry’ your entire compressed air network

Dry air comes with a cost, both in terms of initial investment as well as running costs. The required dryness should be chosen based on the largest compressed air consumers, while more critical applications can be covered with a low PDP dryer at point-of-use.

So before you install a centralized adsorption dryer, verify whether such high degree of dryness is required for your entire system. It could be sufficient to install a centralized refrigeration dryer, and to place a small adsorption or membrane dryer at point-of-use for critical applications.