

# 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.



# AD 15 - 3000 - Non-cycling refrigeration dryers

## General specifications

- ▶ Non-cycling refrigeration dryers
- ▶ Operating Pressure:
  - AD 15 - 50: 4-16 barg/60-232 psig
  - AD 85 - 3000: 4-14 barg/60-203 psig
- ▶ Max. inlet temperature: 55°C/113°F
- ▶ Flow rate: 21 - 5040 m<sup>3</sup>/hr/  
22 - 2966 cfm<sup>(1)</sup>
- ▶ Pressure dew point: up to +3°C/37°F
- ▶ Power supply:
  - AD 15 - 270: 230V AC 50/60 Hz
  - AD 355 - 3000: 400V/50Hz; 380V/60Hz; 460V/60Hz
- ▶ Refrigerant: R513A (AD 15 - 105);  
R410A (AD 125 - 1250);  
R452A (AD 1600 - 3000)

## Refrigeration Dryers: AD Series (15-3000) Non cycling

### AD 15-65



#### Features & Benefits

- Stable performance and guaranteed dew point up to 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
- R513A refrigerant gas: low global warming impact, zero ozone depletion
- Digital display with real-time PDP monitoring
- Easy plug-and-play installation

### AD 85-105



#### Features & Benefits

- Stable performance and guaranteed dew point up to 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 R513A
- Digital display with real-time PDP monitoring
- Easy plug-and-play installation

## Options



Filter support



Bypass valve

Pneumatech's AD 15-3000 non-cycling refrigeration dryers are designed to protect your compressed air system by lowering the presence of moisture in the compressed air. 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 AD15-105 is introducing the efficient and environmental friendly R513A refrigerant, reducing the global warming potential largely.

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 up to 3°C/37°F achievable.

AD 125-270	AD 355-1250	AD 1600 - 3000
		
Features & Benefits	Features & Benefits	Features & Benefits
<ul style="list-style-type: none"> <li>• Stable performance and guaranteed dew point up to 3°C/37°F</li> <li>• Rotary compressors and R410A refrigerant: the winning combination <ul style="list-style-type: none"> <li>• 30% more energy efficient</li> <li>• Requires 19% less refrigerant gas</li> </ul> </li> <li>• Extremely reliable: low vibration levels and limited mechanical load</li> <li>• Ingeniously designed components to ensure maximum performance <ul style="list-style-type: none"> <li>• Hot gas bypass valve to prevent freezing at lower loads</li> <li>• Zero-loss electronic drain to prevent loss of valuable compressed air</li> <li>• Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange</li> </ul> </li> <li>• Digital display with real-time PDP monitoring and voltage-free contact for remote alarm</li> <li>• Easy plug-and-play installation</li> </ul>	<ul style="list-style-type: none"> <li>• Stable performance and guaranteed dew point up to 3°C/37°F</li> <li>• Rotary compressors and R410A refrigerant: the winning combination <ul style="list-style-type: none"> <li>• 30% more energy efficient</li> <li>• Requires 19% less refrigerant gas</li> </ul> </li> <li>• Extremely reliable: low vibration levels and limited mechanical load</li> <li>• Ingeniously designed components to ensure maximum performance <ul style="list-style-type: none"> <li>• Hot gas bypass valve to prevent freezing at lower loads</li> <li>• Zero-loss electronic drain to prevent loss of valuable compressed air</li> <li>• Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange</li> </ul> </li> <li>• Advanced controlling and monitoring thanks to the controller installed <ul style="list-style-type: none"> <li>• Digital PDP display</li> <li>• Remote start/stop</li> <li>• Voltage-free contact for general alarm</li> </ul> </li> <li>• Easy plug-and-play installation</li> </ul>	<ul style="list-style-type: none"> <li>• Stable performance and guaranteed dew point of 3°C/37°F.</li> <li>• Ingeniously designed components to ensure maximum performance <ul style="list-style-type: none"> <li>• Hot gas bypass valve to prevent freezing at lower loads</li> <li>• Zero-loss electronic drain to prevent loss of valuable compressed air</li> <li>• Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange</li> </ul> </li> <li>• Environmental safe refrigerant gases R452A</li> <li>• Advanced controlling and monitoring <ul style="list-style-type: none"> <li>• Digital PDP display</li> <li>• Remote start/stop</li> <li>• Voltage-free contact for general alarm</li> </ul> </li> <li>• Easy plug-and-play installation</li> </ul>

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

# AD 15 - 3000 - Non-cycling refrigeration dryers

Technical specifications for AD 10-3000 50Hz

Pneumatech Variants →	Units	AD 15	AD 20	AD 30	AD 40	AD 65	AD 85	AD 105	AD 125	AD 145	AD 185	AD 230	AD 270	AD 355	AD 425	AD 530	AD 635	AD 750	AD 1000	AD 1250	AD 1600	AD 1800	AD 2500	AD 3000
Specifications ↓																								
Max Operating Pressure	bar	16	16	16	16	16	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Flow <sup>(1)</sup>	l/s	6	10	14	20	30	39	50	60	68	87	108	128	167	200	250	300	400	500	583.3	750	833.3	1166.7	1400
	m3/hr	22	36	50	72	108	140	180	216	245	313	389	461	601	720	900	1080	1440	1800	2100	2700	3000	4200	5040
Power	kW	0.13	0.17	0.19	0.3	0.28	0.67	0.71	0.63	0.7	0.9	0.96	1.12	1.54	1.98	2.01	2.77	3.26	3.89	4.75	6.72	6.80	10.2	12.3
Connection	inch/ DIN	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	2"	2"	2 1/2"	2 1/2"	3"	3"	3"	DN 125	DN 125	DN 125	DN 125
Power Supply	V/Ph/ Hz	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	230/ 1/50	400/ 3/50	400/ 3/50	400/ 3/50	400/ 3/50	400/ 3/50	400/ 3/50	400/ 3/50	400/ 3/50	400/ 3/50	400/ 3/50	400/ 3/50
Weight	kgs	19	19	20	25	27	44	44	62	60	62	82	82	145	158	165	164	325	335	350	380	550	600	650
Dimensions	L (mm)	493	493	493	493	493	497	497	557	557	557	587	587	1070	1070	1070	1070	1083	1083	1083	1121	2099	2099	2099
	W (mm)	350	350	350	350	350	370	370	460	460	460	580	580	805	805	805	805	1020	1020	1020	1020	1020	1020	1020
	H (mm)	450	450	450	450	450	764	764	789	789	789	899	899	962	962	962	962	1526	1526	1526	1526	1535	1535	1535

Note: AD 15-AD 105 including FC

1. low is measured at reerence conditions: ambient pressure o 1 bar(a) and 25°C at operating pressure o 7 bar (g), inlet temperature 35°C.

Correction factors for ambient temperature

Room temperature	°C								
		25	30	35	40	43	46		
	A	AD 15-270	1	0.92	0.84	0.8	0.79	-	
		AD 355-3000	1	0.91	0.81	0.72	-	0.62	

Operating temperature	°C								
		30	35	40	45	50	55	60	
	B	AD 15-270	1.24	1	0.82	0.69	0.58	0.45	-
		AD 355-3000	1	1	0.82	0.69	0.58	0.49	0.42

Operating temperature	bar													
		5	6	7	8	9	10	11	12	13	14	15	16	
	C	AD 15-270	0.9	0.96	1	1.03	1.06	1.08	1.1	1.12	1.13	1.15	1.16	1.17
		AD 355-3000	0.9	0.97	1	1.03	1.05	1.07	1.09	1.11	1.12	1.15	-	-

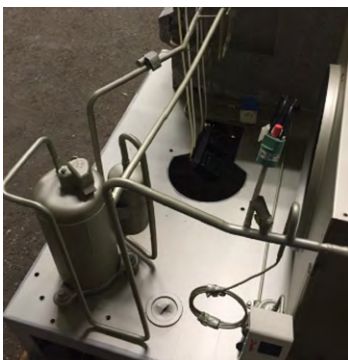
## Anti-corrosion treatment (available for all refrigerant dryers)

### 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 <sub>2</sub> )	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 - 200 - 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
  - AC15-100 optionally available in 20 bar version with timer drain
- ▶ 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)<sup>(1)</sup>
- ▶ 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**

<sup>1</sup> 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%.

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 AC125-200. 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
Flow <sup>(1)</sup> 16 bar	l/s	6	10	15	20	25	30	40	50	60	70	95
	m3/hr	22	36	54	72	90	108	144	180	216	252	342
Flow <sup>(1)</sup> 20 bar	l/s	7.3	14.5	21.8	27.6	34.8	43.5	58	72.5	n/a	n/a	n/a
	m3/hr	26	52	78	99	125	157	209	261	n/a	n/a	n/a
Power consumption	kW	0.2	0.2	0.33	0.41	0.41	0.41	0.57	0.5	0.7	0.7	0.89
	hp	0.27	0.27	0.44	0.55	0.55	0.55	0.76	0.67	0.94	0.94	1.19
Pressure drop over dryer 16 bar	barg	0.07	0.11	0.12	0.12	0.17	0.25	0.2	0.2	0.21	0.28	0.25
	psig	1.02	1.60	1.74	1.74	2.47	3.63	2.90	2.90	3.05	4.06	3.63
Pressure drop over dryer 20 bar	barg	0.04	0.09	0.1	0.1	0.14	0.2	0.16	0.16	n/a	n/a	n/a
	psig	0.58	1.31	1.45	1.45	2.03	2.90	2.32	2.32	n/a	n/a	n/a
Refrigerant type		R513A	R513A	R513A	R513A	R513A	R513A	R513A	R513A	R410A	R410A	R410A
Dimensions	L (mm)	496	496	496	496	496	496	716	716	792	792	792
	L (inch)	19.5	19.5	19.5	19.5	19.5	19.5	28.2	28.2	31.2	31.2	31.2
	W (mm)	377	377	377	377	377	377	380	380	500	500	500
	W (inch)	14.8	14.8	14.8	14.8	14.8	14.8	15.0	15.0	19.7	19.7	19.7
	H (mm)	461	461	461	461	461	461	676	676	680	680	680
	H (inch)	18.1	18.1	18.1	18.1	18.1	18.1	26.6	26.6	26.8	26.8	26.8
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)
Weight	kg	27	27	32	34	34	34	56	57	80.4	80.4	107.4
	lbs	60	60	71	75	75	75	123	126	177	177	237

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 200 - 630 VSD - Refrigeration dryers

## Features & Benefits

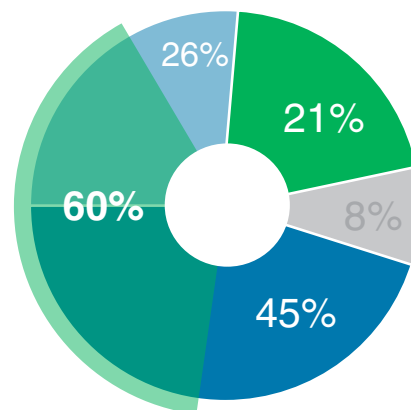
- ▶ Variable frequency drive providing variable frequency drive providing unmatched energy savings
  - Up to 60% in energy savings
  - Patented heat exchangers on air to air side allow very low internal pressure drops 100 - 180 mbar (1.5 - 2.6 PSI) depending on the size resulting in less energy consumption of the compressor at or below 0.18 bar / 2.6 PSI
  - Faster payback as low as 1.5 years as compared to non-cycling or thermal mass dryers
- ▶ Increased uptime, powered by ICONS and new PureLogicT™ for advanced control and monitoring
  - PureLogicT™ controller
    - » Touch based advance controller
    - » Modbus, Profibus or Ethernet/IP, no extra interfaces required
  - Intelligent connectivity system (ICONs)
    - » Insights from PureLogicT™ controller delivered to your device
    - » On-time maintenance to control costs and ensure a longer machine life.
    - » Recognize potential problems before they affect your uptime

## General Specifications

- ▶ Stable and guaranteed performance at all operating conditions - PDP of 3°C – ISO 8573- 1:2010 air purity class 4 guaranteed
- ▶ Reduced power consumptions at all conditions – performance is guaranteed even at ambient conditions as high as 46°C (115°F)
- ▶ 100% of the compressed air nominal flow at all operational temperatures up to the maximum
- ▶ No oversizing necessary for operation at maximum temperature with 100% of the nominal flow
- ▶ Reduced energy consumption of the dryer compared to oversized solution
- ▶ Fully hermetically sealed refrigerant compressor with VSD inverter
- ▶ Patented energy efficient HEAT EXCHANGER
- ▶ PurelogicT™ controller
- ▶ Zero loss drains
- ▶ Single electric connection for easy and smooth installation



**Reduced total cost of ownership and faster payback – as low as 1.5 years thanks to reduced power consumption:**



- Energy consumption by the dryer
- Energy consumption by the compressor due to pressure drop
- Investment
- Installation and maintenance
- **Savings - 60%** - A unique combination of high-efficiency components, smart unit design and an advanced control system enables you to achieve average energy savings of 60%



The AC VSD from Pneumatech raises the bar in refrigerant dryer performance. Using variable speed drive technology, it significantly reduces energy consumption while consistently supplying top-quality air. And, thanks to a carbon footprint that is smaller than that of its competitors, it even benefits the environment.

AC 200-630 VSD is Pneumatech's premium refrigeration dryer range at smaller flows: from 360 to 1080 Nm<sup>3</sup>/hr (210 CFM to 635 CFM)

The new AC VSD refrigerant dryer from Pneumatech was engineered to make a difference, delivering energy savings of up to 60%. At the same time, the AC VSD supports production quality and reliability and offers a small carbon footprint.

The use of variable speed drive (VSD) technology ensures that the AC VSD only uses the energy it needs at any point. The result is a much lower electric bill that greatly reduces the total cost of dryer ownership.

At the same time, Pneumatech's new dryer produces a stable supply of Class 4 purity air, which helps protect production reliability and quality. The AC VSD maintains its low dew point even in ambient temperatures of up to 46°C.

In spite of its sophisticated technology, the dryer is easy to operate thanks to its intuitive PureLogic™ controller. Users can even analyze and optimize their dryer's performance from anywhere by taking advantage of the advanced connectivity and remote monitoring option.

But the AC VSD's benefits extend beyond its outstanding performance. Due to its low energy consumption, it features a smaller carbon footprint than its competitors. Combined with an excellent TEWI-score, it helps companies meet their climate goals.

Lastly, the new AC VSD from Pneumatech is more compact than conventional dryers and can fit even in tight spaces.

#### Technical specifications for AC 200-630 VSD

Specifications ↓	Units	AC200 VSD	AC300 VSD	AC400 VSD	AC450 VSD	AC550 VSD	AC630 VSD
Maximum conditions at full flow ambient (Inlet) temp	°C	46 (60)	46 (60)	46 (60)	46 (60)	46 (60)	46 (60)
Inlet flow for pressure dew point (PDP) of 3°C / 37.4°F	l/s	100	140	180	220	260	300
	cfm	212	297	381	466	551	636
	m <sup>3</sup> /hr	360	500	650	790	940	1080
Pressure drop at full flow	bar	0.16	0.11	0.18	0.14	0.1	0.18
	psi	2.3	1.6	2.6	2	1.5	2.6
Power consumption	kW	0.66	1.04	1.54	1.77	1.9	2.64
	hp	0.90	1.41	2.09	2.41	2.58	3.59
Max. working pressure	bar	14.5	14.5	14.5	14.5	14.5	14.5
	psi	210	210	210	210	210	210
Compressed air connections (NPT for UL version)		G 1 1/2" F	G 2" F	G 2" F	G 2 1/2" F	G 2 1/2" F	G 2 1/2" F
Dimensions	L (mm)	805	805	805	805	805	805
	L (inch)	31.69	31.69	31.69	31.69	31.69	31.69
	H (mm)	962	962	962	962	962	962
	H (inch)	37.87	37.87	37.87	37.87	37.87	37.87
	W (mm)	1040	1040	1040	1040	1040	1040
	W (inch)	41	41	41	41	41	41
Weight	kg	130	134	134	143	150	165
	lbs	287	295	295	315	331	364

#### Correction factors for ambient temperature

Ambient temperature	°C	25	30	35	40	46
	°F	77	86	95	104	114
Temperature correction factor	Kt (amb)	1	0.91	0.81	0.72	0.62

#### Correction factors for compressed air inlet pressure

Operating pressure	barg	6	7	8	10	13
	psig	87	100	116	145	188
Pressure correction factor	Kp	0.97	1	1.03	1.07	1.12

#### Correction factors for compressed air inlet temperature

Inlet temperature	°C	25	30	35	40	46	50	55	60
	°F	77	86	95	104	114	122	131	140
Temperature correction factor	Kt	1.1	1.05	1	0.82	0.69	0.58	0.49	0.42