



# Adsorption Dryers

Pneumatech offers four different adsorption dryer technologies. Heatless dryers (PH) have the lowest initial investment cost, while zero-purge adsorption dryers (PB ZP) the lowest lifecycle cost. Heater purge (PE) and blower purge (PB) dryers balance between both.

No matter what your preference is, Pneumatech guarantees stable, dry air at the lowest operating costs and with excellent control and monitoring capabilities for each dryer you select.

**PB 210 - 635 HE (P/ZP) -**  
Blower purge / zero purge adsorption dryers

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## Features & Benefits

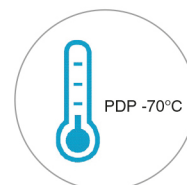
- ▶ Advanced energy management for lowest operating costs
  - Compressor synchronization
  - PDP control
  - Regeneration & cooling temperature control
  - Purge nozzle optimization (optional)
- ▶ Zero-purge variants for lowest life-cycle costs
  - Purge back-up mode for ambient conditions outside of limitations
- ▶ High-quality, high-efficient desiccant, selected for the right application
  - PDP -40°C/-40°F (std): silica gel WR & NWR
  - PDP -70°C/-94°F (optional): molecular sieves
- ▶ Minimal risk of crushed desiccant thanks to the sonic nozzle and the large vessel diameter
- ▶ Counter-current regeneration for optimal energy efficiency and guaranteed dry air
- ▶ High reliability and robust design
- ▶ Low noise levels while purging
- ▶ Designed for transportability
- ▶ High efficient heaters, designed for maximum lifetime and minimal risk
- ▶ Compact, efficient and reliable side-channel centrifugal blower
- ▶ Optimal control and monitoring thanks to the Purelogic™ controller

## General Specifications

- ▶ Blower purge & zero purge adsorption dryers: welded vessel design
- ▶ Dew points achievable: -40°C/-40°F & -70°C/-94°F (only with Purge Cooled option)
- ▶ Pressure range: 4-14,5 bar/58-210 PSI
- ▶ Ambient temperature range: 1-45°C/34-113°F
- ▶ Inlet temperature range: 1-50°C/34-122°F
- ▶ Power supply: 400V 50Hz; 440-460V 60Hz



## Options



**-70°C PDP variant available**  
(only available on blower purge variants)



**Reverse in and outlet pipe**



**NEMA 4 electrical enclosure**



**Insulated vessels**



**Inlet Blower Filters**



**Purge nozzle optimization**



PB dryers are for customers who focus on energy efficiency and low lifecycle costs, while maintaining the highest standards in air purity. PB dryers use heated blower purge air to remove moisture from the desiccant material and have therefore no purge loss during regeneration. The Zero Purge variants reduce life cycle cost even further by also eliminating purge loss during cooling.

PB 210-635 HE adsorption dryers are capable of drying air to a PDP of -40°C/-40°F as standard and -70°C/-94°F as option for purge units. The desiccant is housed in welded vessels, which are coated and can operate up to 14.5 bar/ 210 psi (fatigue load). All dryers are standard equipped with 2 coalescing pre-filters before and 1 particulate filter after the dryer.

Operating costs are reduced to the absolute minimum thanks to PDP control, regeneration & cooling temperature control and compressor synchronization; which are all integrated in the Purelogic™ controller. Zero Purge variants are equipped with a purge back-up mode which switches the dryer to purge cooling mode in case PDP could not be met at ambient conditions outside of limitations. The Purelogic™ also ensures maximum reliability by monitoring the most important parameters of the dryer and offers impressive control and monitoring capabilities.

Technical specifications for PB 210 HE up to PB 635 HE (ZP) (standard version, PDP -40 °C)											
Specification	Unit	PB 210HE	PB 320 HE	PB 390 HE	PB 530 HE	PB 635 HE	PB210HEZP	PB320HEZP	PB390HEZP	PB530HEZP	PB 635 HE ZP
Cooling Mode	-	Purge	Purge	Purge	Purge	Purge	Zero Purge	Zero Purge	Zero Purge	Zero Purge	Zero Purge
Nominal volume flow at dryer inlet <sup>(1)</sup>	l/s	100	150	185	250	300	100	150	185	250	300
	m³/hr	360	540	666	900	1080	360	540	666	900	1080
Purge air consumption average	%	2	2	2	2	2	0	0	0	0	0
Pressure Drop Over Dryer	Bar	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	PSI	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
Inlet and outlet connections	G	1 ½"	1 ½"	1 ½"	2"	2"	1 ½"	1 ½"	1 ½"	2"	2"
	NPT	1 ½"	1 ½"	1 ½"	2"	2"	1 ½"	1 ½"	1 ½"	2"	2"
Standard Pre & after filter sizes	General purpose coalescing filter	6 G HE	7 G HE	8 G HE	9 G HE	9 G HE	6 G HE	7 G HE	8 G HE	9 G HE	9 G HE
	High efficiency coalescing filter	6 C HE	7 C HE	8 C HE	9 C HE	9 C HE	6 C HE	7 C HE	8 C HE	9 C HE	9 C HE
	Particulate filter	6 S HE	7 S HE	8 S HE	9 S HE	9 S HE	6 S HE	7 S HE	8 S HE	9 S HE	9 S HE
Height	mm	1720	1770	1770	1816	1853	1855	1891	1891	1969	2006
	inch	67.7	69.7	69.7	71.5	73.0	73.0	74.4	74.4	77.5	79.0
Width	mm	770	870	870	955	1010	840	966	966	1098	1123
	inch	30.3	34.3	34.3	37.6	39.8	33.1	38.0	38.0	43.2	44.2
Length	mm	1250	1300	1300	1345	1425	1174	1360	1360	1580	1507
	inch	49.2	51.2	51.2	53.0	56.1	46.2	53.5	53.5	62.2	59.3
Mass	Kg	640	680	710	775	820	400	498	537	663	765
	Lb	1411	1499	1565	1709	1808	882	1098	1184	1462	1687

1. Flow is measured at reference conditions: 1 Bar(a) and 20°C at operating pressure of 7 bar (g), inlet temperature 35°C & std PDP of -40°C at the outlet.  
(For ZP versions inlet temperature is 33°C)

Flow correction factors due to air inlet pressure																
Operating pressure	Bar(g)	4.5	5	6	7	8	9	10	11	12	13	14	15	16		
	psi (g)	65	72	87	100	116	130	145	160	174	189	203	218	232		
Pressure correction factor	Kp	0.687	0.75	0.88	1	1.13	1.25	1.38	1.5	1.62	1.74	1.86	1.98	2.1		

Flow correction factors due to air inlet temperature (For -70°C PDP Units with Molecular Sieves)									
Temperature	°C	20	25	30	35	40	45	50	55
	°F	68	77	86	95	104	113	122	131
Temperature Correction Factor	Kt	1	1	1	1	1	0.78	0.61	0.49

Flow correction factors due to air inlet temperature (For -40°C PDP Units with Silica Gel)							
Temperature	°C	20	25	30	35	40	45
	°F	68	77	86	95	104	113
Temperature correction factor	Kt	1	1	1	1	0.75	0.55

Flow correction factors due to Pressure Dew Point (For 11 Bar Units)				
Dew point	°C	0	-40	-70
	°F	32	-40	-94
Dew point correction factor	Kdp	1	1	0.8



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