

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. Heated 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.



PH 2 - 45 HE - Extruded profile heatless adsorption dryers

Features & Benefits

- ▶ Advanced energy management for lowest operating costs
 - Compressor synchronization
 - Purge nozzle optimization (optional)
 - PDP control (optional)
- ▶ High-quality, high-efficient desiccant, selected for the right application – molecular sieves
- ▶ Spring-loaded cartridges, hence minimizing the risk of crushed desiccant
- ▶ Counter-current regeneration for optimal energy efficiency and guaranteed dry air
- ▶ Designed for transportability & mountability
 - Dryer can be installed vertically or horizontally
 - Wall-mounting kit (optional)
- ▶ In & outlet can be reversed
- ▶ Low noise levels while purging
- ▶ High reliability and robust design

General Specifications

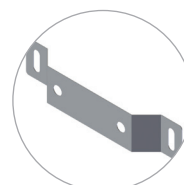
- ▶ Heatless adsorption dryers: extruded profile design
- ▶ Dew points achievable: -40°C/-40°F & -70°C/-94°F
- ▶ Pressure range: 4-16 barg/58-232 psig
- ▶ Ambient temperature range: 1-50°C/34-122°F
- ▶ Inlet temperature range: 1-60°C/34-140°F
- ▶ Power supply: 230VAC 50/60Hz



Options



Purge nozzle optimization



Wall mounting kit



PDP control

Incorporating high-quality components, PH heatless adsorption dryers provide you with clean, dry air to extend the life of your equipment and products. Heatless adsorption dryers use dry, expanded purge air to remove moisture from the desiccant material.

PH 2-45 HE adsorption dryers are capable of drying air to a PDP of -70°C/-94°F, simply by reducing the flow, thanks to the use of carefully selected molecular sieves. The desiccant is housed in a robust extruded aluminum body, which can operate until 16 barg/232 psig (fatigue load). The dryers are equipped with a mounted pre-filter and an integrated after-filter as standard,

can be installed vertically and can also be wall-mounted with a specially designed wall-mounting kit (optional).

The controller ensures the lowest operational costs thanks to compressor synchronization and the optional PDP control. LED's on the controller indicate whether power supply is connected, towers are pressurized and solenoids are functioning properly. It also provides with preventive maintenance information. Alarms can also be triggered remote thanks to the available voltage-free contact.

Technical specifications for PH 2 HE up to PH 45 HE (standard version, PDP -40 °C)

Specifications	Unit	PH 2 HE	PH 4 HE	PH 6 HE	PH 11 HE	PH 15 HE	PH 20 HE	PH 25 HE	PH 35 HE	PH 45 HE
Nominal volume flow at dryer inlet ⁽¹⁾	l/s	1	2	3	5	7	10	12	17	22
	m³/hr	4	7	11	18	25	36	43	61	79
Average purge air consumption	%	18	18	18	18	18	18	18	18	18
Inlet and outlet connections	G	1/4"	1/4"	1/4"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
	NPT	1/4"	1/4"	1/4"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Pressure drop at max. flow	barg	0.012	0.075	0.185	0.01	0.04	0.075	0.125	0.21	0.34
	psig	0.17	1.09	2.68	0.15	0.58	1.09	1.81	3.05	4.93
Included pre-filter size	Super fine filter	Mini 3 C HE	Mini 3 C HE	Mini 3 C HE	TF 1 C HE	TF 1 C HE	TF 1 C HE	PH 2 C HE	PH 2 C HE	PH 2 C HE
Mass	kg	7	9	11	19	22	25	29	35	44
	lbs	15.5	19.8	24.2	41.9	48.5	55.1	63.9	77.1	97
Height	mm	540	720	855	640	725	875	1015	1270	1505
	inch	21.2	28.3	33.6	25.1	28.5	34.4	39.9	50	59.2
Width	mm	197	197	197	320	320	320	320	320	320
	inch	7.7	7.7	7.7	12.5	12.5	12.5	12.5	12.5	12.5
Length	mm	106	106	106	149	149	149	149	149	149
	inch	4.1	4.1	4.1	5.8	5.8	5.8	5.8	5.8	5.8

1. Flow is measured at reference conditions: 1 bara and 20°C at operating pressure of 7 barg, inlet temperature 35°C & std PDP of -40°C at the outlet.

Flow correction factors due to air inlet pressure Kp

Operating pressure	barg	4	5	6	7	8	9	10	11	12	13	14	15	16
	psig	58	72	87	100	116	130	145	160	174	189	203	218	232
Pressure correction factor	Kp	0.62	0.75	0.87	1	1.12	1.25	1.37	1.5	1.62	1.75	1.87	2	2.12

Flow correction factors due to air inlet temperature Kt

Temperature	°C	20	25	30	35	40	45	50
	°F	68	77	86	95	104	113	122
Temperature correction factor	Kt	1.07	1.06	1.04	1	0.88	0.67	0.55

Flow correction factors due to pressure dew point Kdp

Dew point	°C	-40	-70
	°F	-40	-94
Dew point correction factor	Kdp	1	0.7

PH 45 - 690 HE with structured desiccant - Heatless adsorption dryers

Features & Benefits

- ▶ Structured desiccant offers highly efficient air flow and regeneration
- ▶ Stable low pressure dew point
- ▶ 40% longer desiccant lifetime
- ▶ Easy desiccant maintenance
- ▶ No desiccant dust that can cause dryer failures and compromise production
- ▶ Pneumatic valves add robustness in demanding environments
- ▶ Vertical or horizontal installation
- ▶ Purge nozzle optimization
- ▶ PDP control (optional for DC1 controller)
- ▶ Wall-mounting kit (optional for Simplex models)

General Specifications

- ▶ Heatless adsorption dryers: extruded profile design
- ▶ Dew points achievable: -20°C/-5°F, -40°C/-40°F
- ▶ Pressure range: 4-14 barg/58-203 psig
- ▶ Ambient temperature range: 2-45°C/36-113°F
- ▶ Inlet temperature range : 2-60°C/ 36-140°F
- ▶ Power supply: 230VAC 50/60Hz & 115VAC 50/60Hz



Options



PDP control



Wall mounting kit

The Pneumatech PH HE adsorption dryer has always earned its High-Efficiency label. Its new models with structured desiccant take these energy savings to a new level. In fact, thanks to their groundbreaking solid desiccant, the newest additions to the PH HE range offer the lowest total cost of ownership on the market. They also set new standards in reliability, low maintenance requirements and versatility for truly superior dryer performance.

A new type of heatless adsorption dryer

Solid desiccant:

- Much more efficient air flow reduces energy costs

- Evenly distributed air flow extends desiccant lifetime
- 40% longer lifetime
- No desiccant dust to filter out
- Fast and easy maintenance

Pneumatic valves: enhance reliability in tough conditions

PureLogic™ Touch controller:

- Easy to use
- Optimizes performance and efficiency of the dryer
- Connectivity to DCS, SCADA and PLC systems available

Technical specifications for PH 45 HE up to PH 690 HE (Version PDP -40°)													
Specifications	Unit	PH 45 HE	PH 65 HE	PH 90 HE	PH 110 HE	PH 135 HE	PH 180 HE	PH 220 HE	PH 265 HE	PH 355 HE	PH 400 HE	PH 535 HE	PH 690 HE
Nominal volume flow at dryer inlet	l/s	20	30	40	55	65	85	105	125	170	190	250	335
	m ³ /h	72	108	144	198	234	306	378	450	612	684	900	1206
Connections Inlet / Outlet	G	1/2"	1/2"	1"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"
	NPT	1/2"	1/2"	1"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"
Pressure drop at max. flow	barg	0.08	0.08	0.08	0.11	0.16	0.245	0.12	0.12	0.215	0.155	0.24	0.3
	psig	1.16	1.16	1.16	1.6	2.32	3.55	1.74	1.74	3.12	2.25	3.48	4.35
Height	mm	1205	1205	1205	1495	1495	1835	1495	1495	1835	1495	1835	1835
	inch	47.44	47.44	47.44	58.86	58.86	72.24	58.86	58.86	72.24	58.86	72.24	72.24
Width	mm	864	864	904	904	904	934	934	964	964	964	1042	1042
	inch	34.02	34.02	35.59	35.59	35.59	36.77	36.77	37.95	37.95	37.95	41.02	41.02
Length	mm	394	394	394	394	394	394	564	564	564	734	734	929
	inch	15.51	15.51	15.51	15.51	15.51	15.51	22.2	22.2	22.2	28.9	28.9	36.57
Mass	KG	95	100	110	128	140	165	215	234	276	331	389	500
	Lb	209	220	242	282	309	363	473	515	607	728	856	1100
Included pre filter size	Fine filter	PMH 85 G	PMH 119 G	PMH 178 G	PMH 178 G	PMH 297 G	PMH 297 G	PMH 545 G	PMH 545 G	PMH 545 G	PMH 545 G	PMH 1189 G	PMH 1189 G
	Super fine filter	PMH 85 C	PMH 119 C	PMH 178 C	PMH 178 C	PMH 297 C	PMH 297 C	PMH 545 C	PMH 545 C	PMH 545 C	PMH 545 C	PMH 1189 C	PMH 1189 C

Technical specifications for PH 50 HE up to PH 625 HE (version PDP -20°C)												
Specifications	Unit	PH 50 HE	PH 75 HE	PH 100 HE	PH 140 HE	PH 165 HE	PH 215 HE	PH 265 HE	PH 320 HE	PH 415 HE	PH 475 HE	PH 625 HE
Nominal volume flow at dryer inlet	l/s	25	35	50	65	80	105	125	150	195	225	300
	m ³ /h	90	126	180	234	288	378	450	540	702	810	1080
Connections Inlet / Outlet	G	1/2"	1/2"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"
	NPT	1/2"	1/2"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"
Pressure drop at max. flow	barg	0.08	0.08	0.125	0.17	0.245	0.33	0.12	0.18	0.28	0.2	0.33
	psig	1.16	1.16	1.81	2.46	3.55	4.78	1.74	2.61	4.06	2.9	4.78
Height	mm	1205	1205	1205	1495	1495	1835	1495	1495	1835	1495	1835
	inch	47.44	47.44	47.44	58.86	58.86	72.24	58.86	58.86	72.24	58.86	72.24
Width	mm	864	904	904	904	934	934	964	964	964	1042	1042
	inch	34.02	35.59	35.59	35.59	36.77	36.77	37.95	37.95	37.95	41.02	41.02
Length	mm	394	394	394	394	394	394	564	564	564	734	734
	inch	15.51	15.51	15.51	15.51	15.51	15.51	22.20	22.20	22.20	28.90	28.90
Mass	KG	95	100	110	128	141	165	218	234	277	331	394
	Lb	209	220	242	282	310	363	480	515	609	728	867
Included pre filter size	Fine filter	PMH 85 G	PMH 119 G	PMH 178 G	PMH 297 G	PMH 297 G	PMH 545 G	PMH 545 G	PMH 545 G	PMH 545 G	PMH 1189 G	PMH 1189 G
	Super fine filter	PMH 85 C	PMH 119 C	PMH 178 C	PMH 297 C	PMH 297 C	PMH 545 C	PMH 545 C	PMH 545 C	PMH 545 C	PMH 1189 C	PMH 1189 C

Flow is measured at Reference Conditions : 1 bara and 20°C at operating pressure of 7 barg, inlet temperature 35°C & std PDP of -40°C or -20°C at the outlet
For applications that require -70° PDP, please refer to the previous PH HE range

PH 55 - 550 HE - Extruded profile heatless adsorption dryers

Features & Benefits

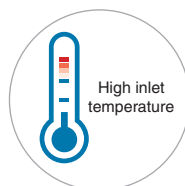
- ▶ Advanced energy management for lowest operating costs
 - Compressor synchronization
 - Purge nozzle optimization
 - PDP control (optional)
- ▶ Best-in-class performance thanks to unique valve and exhaust design (patent pending)
 - Lowest pressure drop during drying
 - Lowest purge loss by ensuring maximum purge air expansion during regeneration
- ▶ Low noise levels during purge and blow-off
- ▶ High-quality, high-efficient desiccant, selected for the right application
 - PDP -70°C/-94°F: molecular sieves
- ▶ Spring-loaded desiccant, minimizing the risk of crushing
- ▶ Counter-current regeneration for optimal energy efficiency and guaranteed dry air
- ▶ Designed for transportability & mountability
 - Wall-mounting kit for PH 55-190 HE (optional)
- ▶ Optimal control and monitoring thanks to the Purelogic™ controller (optional)
- ▶ Desiccant bags for easy service from the top

General Specifications

- ▶ Heatless adsorption dryers: extruded profile design
- ▶ Dew points achievable: -70°C/-94°F
- ▶ Pressure range: 4-14 barg/58-203 psig
- ▶ Ambient temperature range: 1-45°C/34-113°F
- ▶ Inlet temperature range: 1-50°C/34-122°F (For temperatures up to 60°C/140°F: see HIT option)
- ▶ Power supply: 230VAC 50/60Hz & 115VAC 50/60Hz



Options



High inlet temperature



Wall mounting kit



PDP control



Purelogic controller



IP65 protection

Incorporating high-quality components, PH heatless adsorption dryers provide you with clean, dry air to extend the life of your equipment and products. Heatless adsorption dryers use dry, expanded purge air to remove moisture from the desiccant material.

PH 55-550 HE adsorption dryers are available in one PDP variant: -70°C/-94°F, optimized to provide the lowest purge loss. The unique manifold (patent pending) includes pilot air controlled 3/2-way valves, which switch fast and reliably. The pressure drop over the valves is reduced to a minimum. This does not only result in a low pressure drop over the dryer, but also ensures maximum purge air expansion during regeneration. The latter makes that the purge consumption of the dryers has been reduced significantly.

The desiccant is spring-loaded and housed in a robust extruded aluminum body, which can operate up to 14 barg/203 psig (fatigue load). The dryers are equipped with a mounted pre-filter and after-filter as standard and can also be wall-mounted with a specially designed wall-mounting kit (optional).

Operating costs are optimized at all times thanks to the availability of compressor synchronization and purge nozzle optimization as standard and PDP control as option. The full machine status can be checked on the display of the controller and the vessel pressure gauges on the unit.

The controller indicates whether power supply is connected, towers are pressurized, valves are functioning properly or preventive maintenance needs to be done. In case the optional PDP control is connected, the PDP value can monitored from the display. Alarms and warnings can also be triggered remote with the available voltage-free contacts.

Optionally the Purelogic™ can be used as central brain of the adsorption dryer.

The Purelogic™ offers impressive control and monitoring capabilities, and can communicate with industrial protocols as Modbus, Profibus or Ethernet/IP.

Technical specifications for PH 55 HE up to PH 420 HE (version PDP -70°C)

Specification	Unit	PH 55 HE	PH 75 HE	PH 95 HE	PH 120 HE	PH 140 HE	PH 190 HE	PH 230 HE	PH 275 HE	PH 350 HE	PH 420 HE
Nominal volume flow at dryer inlet ⁽¹⁾	l/s	25	35	45	55	65	90	110	130	165	195
	m³/hr	90	126	162	198	234	324	396	468	594	702
Regeneration air consumption average at max. flow	%	24	24	24	24	24	24	24	25	25	26
Connection inlet/outlet	G	1/2"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
	NPT	1/2"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Pressure drop at max. flow	barg	0.035	0.073	0.133	0.043	0.063	0.133	0.08	0.123	0.112	0.156
	psig	0.51	1.06	1.93	0.62	0.91	1.93	1.16	1.78	1.62	2.26
Included pre & after filter size	Super fine filter	TF 3 C HE	TF 4 C HE	TF 5 C HE	TF 5 C HE	TF 6 C HE	TF 6 C HE	TF 6 C HE	TF 7 C HE	TF 8 C HE	TF 8 C HE
	Dust filter	TF 3 S HE	TF 4 S HE	TF 5 S HE	TF 5 S HE	TF 6 S HE	TF 6 S HE	TF 6 S HE	TF 7 S HE	TF 8 S HE	TF 8 S HE
Height	mm	1205	1205	1495	1495	1835	1495	1495	1835	1495	1835
	inch	47.4	47.4	58.9	58.9	72.2	58.9	58.9	72.2	58.9	72.2
Width	mm	807	827	847	847	877	907	906	907	907	907
	inch	31.8	32.6	33.3	33.3	34.5	35.7	35.7	35.7	35.7	35.7
Length	mm	394	394	394	394	394	564	564	564	734	734
	inch	15.5	15.5	15.5	15.5	15.5	22.2	22.2	22.2	28.9	28.9
Mass	kg	100	109	128	140	165	217	234	276	331	389
	lb	220.5	240.3	282.2	308.6	363.8	478.4	515.9	608.5	729.7	857.6

*1. Flow is measured at Reference Conditions: 1 bara and 20°C at operating pressure of 7 barg, inlet temperature 35°C & std PDP of -70°C at the outlet

Flow correction factors due to air inlet pressure

Operating pressure	barg	4	5	6	7	8	9	10	11	12	13	14
	psig	58	72	87	100	116	130	145	160	174	189	203
Pressure correction factor	Kp	0.62	0.75	0.87	1	1.12	1.25	1.37	1.5	1.62	1.75	1.87

Flow correction factors due to air inlet temperature

Temperature	°C	20	25	30	35	40	45	50
	°F	68	77	86	95	104	113	122
Temperature correction factor	Kt	1	1	1	1	0.84	0.67	0.55

PH 760 - 3390 HE - Welded vessel heatless adsorption dryers

Features & Benefits

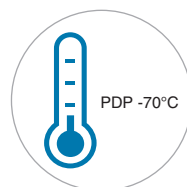
- ▶ Available in three standard variants
 - With Standard DC1 Controller (PDP Control optional)
 - With Purelogic™ (PDP control std available)
 - With Pneumatic Controller (no need of electricity for the installation and no PDP control possible)
- ▶ Lowest possible pressure drop thanks to innovative open silencer design
- ▶ Improved performance with reduced purge rate to 16% across the complete range
- ▶ Advanced energy management for lowest operating costs
 - PDP control - (std with Purelogic™ and optional with DC1 Controller)
 - Compressor synchronization
 - Purge nozzle optimization (optional)
- ▶ High-quality, high-efficient desiccant, selected for the right application
 - PDP -40°C/-40°F (std): activated alumina
 - PDP -70°C/-94°F and high inlet temp. (option): molecular sieves
- ▶ Minimal risk of crushed desiccant thanks to the large vessel diameter and the sonic nozzle (std available)
- ▶ Counter-current regeneration for optimal energy efficiency and guaranteed dry air
- ▶ High reliability and robust design
- ▶ Low noise levels while purging
- ▶ Designed for transportability
- ▶ Optimal control and monitoring thanks to the Purelogic™ controller

General Specifications

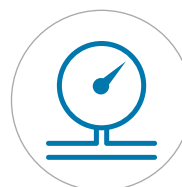
- ▶ Heatless adsorption dryers: welded vessel design
- ▶ Dew points achievable: -40°C/-40°F & -70°C/-94°F
- ▶ Pressure range: 4-9 barg/58-130 psig (14 barg/203 psig variant available as separate variant)
- ▶ Ambient temperature range: 1-50°C/34-122°F
- ▶ Inlet temperature range: 1-55°C/34-131°F
- ▶ Power supply: 230VAC 50 Hz; 115VAC 60 Hz 3 ph



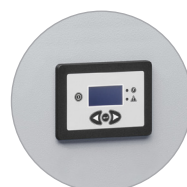
Variants



PDP -70°C



14.5 Bar(g)



DC1 controller

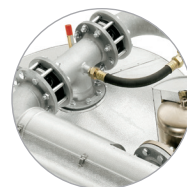


Purelogic™



Pneumatic controlled

Options



Purge nozzle optimization



PDP Control for DC1 controller variants (std with Purelogic™ Controller)



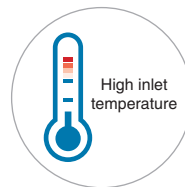
In and outlet filters



Vessel Safety valves



Wooden Packaging



High inlet temperature

Pneumatech presents the newly designed and significantly improved heatless adsorption dryer range – PH 760-3390 HE. Incorporating high-quality components, PH heatless adsorption dryers provide you with clean, dry air to extend the life of your equipment and products. Heatless adsorption dryers use dry, expanded purge air to remove moisture from the desiccant material.

PH 760-3390 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 higher flows up to 5760 m³/hr/3390 cfm. The desiccant is housed in welded vessels, which are coated and can operate up to 9 barg/130 psig (fatigue load) with std variant and up to 14,5 barg/203 psi with high pressure variant (fatigue load). All dryers can be equipped with 2 coalescing pre-filters before and 1 particulate filter after the dryer (optional).

Thanks to ingeniously designed mechanical components i.e open type of silencers and large vessels, PH 760-3390 HE range offers highest performance with lowest pressure drop and improved purge loss of 16%.

Considering different needs of the customers, the PH 760-3390 HE range offers 3 different controller for different requirements. DC 1 Controller version has a basic controller with required controls and monitoring such as Service Alarm, General alarm relay, synchronization control and optional dew point control whereas Purelogic™ controller version will have the Purelogic™ as central brain of the adsorption dryer. The Purelogic™ optimizes operating costs; ensures maximum reliability by monitoring the most important parameters; and offers impressive control and monitoring capabilities. For special applications where Pneumatic control is preferred and no electricity is possible, PH 760-3390 HE also operates with Pneumatically enabled controller.

Technical specifications for PH 760 HE up to PH 3390 HE (standard version, -40 PDP °C)

Specification	Unit	PH760 HE	PH1020 HE	PH1330 HE	PH2060 HE	PH2670 HE	PH3390 HE
Max volume Flow at Dryer Inlet ⁽¹⁾	l/s	360	480	630	970	1260	1600
	m³/hr	1296	1728	2268	3492	4536	5760
Regeneration Air Consumption average at max. flow	%	16	16	16	16	16	16
Pressure Drop over Dryer excluding Filters	bar	0.15	0.15	0.15	0.15	0.15	0.18
	psi	2.18	2.18	2.18	2.18	2.18	2.61
Inlet and outlet connections	DIN PN16	DN80	DN80	DN80	DN100	DN100	DN150
Optional Pre & After Filter Sizes ⁽²⁾	General purpose coalescing filter	PMH G 1529	PMH G 1529	G 1F	G 2F	G 3F	G 4F
	High efficiency coalescing filter	PMH C 1529	PMH C 1529	C 1F	C 2F	C 3F	C 4F
	Particulate filter	PMH S 1529	PMH S 1529	S 1F	S 2F	S 3F	S 4F
Length	mm	1776	1776	1884	2359	2472	2788
	inch	69.9	69.9	74.1	92.8	97.3	109.7
Width	mm	822	822	822	1000	1026	1417
	inch	32.3	32.3	32.3	39.3	40.3	55.7
Height	mm	2549	2549	2604	2671	2653	2576.5
	inch	100.3	100.3	102.5	105.1	104.4	101.4
Length	inch	69.9	69.9	74.2	92.9	97.3	109.8
Width	inch	32.4	32.4	32.4	39.4	40.4	55.8
Height	inch	100.4	100.4	102.5	105.2	104.4	101.4
Mass	kg	1220	1300	1620	2651	3100	4600
	lbs	2690	2866	3571	5844	6834	10141

*1. Flow is measured at Reference Conditions: 1 Bar(a) and 25°C at operating pressure of 7 bar (g), inlet temperature 35°C & std PDP of -40°C at the outlet

*2. Filters are sized at reference conditions. Consult the AML of the filters for sizing outside the reference conditions.

For accurate sizing for your operating conditions consult Pneumatech

The cost-efficient alternative to PH HE adsorption dryers

Features & Benefits

- ▶ Advanced energy management for lowest operating costs
 - Compressor synchronization
 - Purge nozzle optimization (2 nozzles)
 - PDP control (optional)
- ▶ High reliability and low maintenance costs thanks to unique valve design (patent pending)
- ▶ High-quality desiccant, resulting in a consistent PDP of -20°C/-3°F or -40°C/-40°F
- ▶ Spring-loaded desiccant, minimizing the risk of crushing
- ▶ Counter-current regeneration for optimal energy efficiency and guaranteed dry air
- ▶ Designed for transportability & mountability
 - Wall-mounting kit for PH 55-140 S (optional)
- ▶ Advanced controller to monitor machine status at all times
- ▶ Desiccant bags for easy service from the top

General Specifications

- ▶ Heatless adsorption dryers: extruded profile design
- ▶ Dew points achievable: -20°C/-3°F & -40°C/-40°F
- ▶ Pressure range: 4-14 barg/58-203 psig
- ▶ Ambient temperature range: 1-45°C/34-113°F
- ▶ Inlet temperature range: 1-50°C/34-122°F
- ▶ Power supply: 230VAC 50/60Hz & 115VAC 50/60Hz



Options



Wall mounting kit



PDP control

Incorporating high-quality components, PH heatless adsorption dryers provide you with clean, dry air to extend the life of your equipment and products. Heatless adsorption dryers use dry, expanded purge air to remove moisture from the desiccant material.

PH 55-550 S adsorption dryers are available in 2 PDP variants: -20°C/-4°F and -40°C/-40°F. The unique manifold (patent pending) includes pilot air controlled 3/2-way valves, which switch fast and reliably.

The desiccant is spring-loaded and housed in a robust extruded aluminum body, which can operate up to 14 barg/203 psig (fatigue load). Pre- and afterfilters are delivered as standard with every dryer.

Operating costs are optimized at all times thanks to the availability of compressor synchronization and purge nozzle optimization as standard and PDP control as option. The full machine status can be checked on the display of the controller and the vessel pressure gauges on the unit. The controller indicates whether power supply is connected, towers are pressurized, valves are functioning properly or preventive maintenance needs to be done. In case the optional PDP control is connected, the PDP value can be monitored from the display. Alarms and warnings can also be triggered remote with the available voltage-free contacts.

Technical specifications for PH 55 S up to PH 550 S (standard version, PDP -40 °C)

Specification	Unit	PH 55 S	PH 75 S	PH 95 S	PH 120 S	PH 140 S	PH 190 S	PH 230 S	PH 275 S	PH 350 S	PH 420 S	PH 550 S
Nominal volume flow at dryer inlet	l/s	25	35	45	55	65	90	110	130	165	195	260
	m³/hr	90	126	162	198	234	324	396	468	594	702	936
Regeneration air consumption average at max. flow ^{(1) (2)}	%	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
Pressure drop at max. flow	barg	0.03	0.059	0.107	0.171	0.251	0.107	0.171	0.251	0.447	0.251	0.494
	psig	0.44	0.86	1.55	2.48	3.64	1.55	2.48	3.64	6.48	3.64	7.16
Connection inlet/outlet	G	1"	1"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
	NPT	1"	1"	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Integrated filter model	Super fine filter	TF 2 C S	TF 3 C S	TF 4 C S	TF 5 C S	TF 5 C S	TF 6 C S	TF 6 C S	TF 6 C S	TF 7 C S	TF 8 C S	TF 8 C S
	Dust filter	TF 2 S S	TF 3 S S	TF 4 S S	TF 5 S S	TF 5 S S	TF 6 S S	TF 6 S S	TF 6 S S	TF 7 S S	TF 8 S S	TF 8 S S
Height	mm	1070	1115	1285	1465	1615	1285	1465	1615	1695	1615	1915
	inch	42.1	43.9	50.6	57.7	63.6	50.6	57.7	63.6	66.7	63.6	75.4
Width	mm	620	620	620	620	620	620	620	620	620	620	620
	inch	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
Length	mm	401	401	401	401	401	571	571	571	571	738	738
	inch	15.8	15.8	15.8	15.8	15.8	22.5	22.5	22.5	22.5	29.1	29.1
Mass	kg	87	88	99	114	124	165	197	211	245	298	328
	lbs	191.8	194.0	218.3	251.3	273.4	363.8	434.3	465.2	540.1	657.0	723.1

*1. Flow is measured at reference conditions: 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C & std PDP of -40°C at the outlet.

Flow correction factors due to air inlet pressure Kp

Operating pressure	barg	4	5	6	7	8	9	10	11	12	13	14
Pressure correction factor	Kp	0.62	0.75	0.87	1	1.12	1.25	1.37	1.5	1.62	1.75	1.87

Flow correction factors due to air inlet temperature Kt

Temperature	°C	20	25	30	35	40	45	50
Temperature correction factor	Kt	1	1	1	1	0.84	0.67	0.55

PE 760 - 3390 S - Heated purge adsorption dryers

Features & Benefits

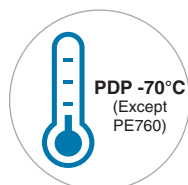
- ▶ Advanced energy management for lowest operating costs
 - Compressor synchronization
 - PDP control (optional)
 - Regeneration & cooling temperature control
- ▶ High-quality, high-efficient desiccant, selected for the right application
 - PDP -40°C/-40°F (std): Activated Alumina⁽¹⁾
 - PDP -70°C/-94°F (option): Molecular sieves and Activated alumina
- ▶ 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
- ▶ Optimal control and monitoring thanks to the Purelogic™ controller

General Specifications

- ▶ Heated purge adsorption dryers: welded vessel design
- ▶ Dew points achievable: -40°C/-40°F & -70°C/-94°F
- ▶ Pressure range: 4-10 barg/58-145 psig
- ▶ Ambient temperature range: 1-40°C/34-104°F
- ▶ Inlet temperature range: 1-45°C/34-113°F
- ▶ Power supply: 400VAC 50Hz; 440-460VAC 60Hz



Options



PDP -70°C
(Except PE760)

PDP -70°C
(Except PE760)



In and outlet filters



Wooden packaging
(Std on PE760)



PDP control



Vessel insulation
(required for
PDP-70°C option)



Vessel safety
valves
(Std on PE760)

¹For PE760S (-40°C PDP) Desiccant used is silica gel WR & NWR.

With distinctive, patented technology, PE adsorption dryers provide you with a dry air solution; at a lower initial investment cost than PB blower purge dryers and a lower lifecycle cost than PH heatless dryers. PE dryers use heated purge air to remove moisture from the desiccant material.

PE 760S-3390S adsorption dryers are capable of drying air to a PDP of -40°C/-40°F as standard and -70°C/-94°F as option. The desiccant is housed in welded vessels, which are coated and can

operate up to 10 barg/145 psig (fatigue load). Mounted pre- and after- filters can be ordered as an option.

The Purelogic™ is the central brain of the adsorption dryer. It optimizes operating costs thanks to the availability of regeneration temperature control, PDP control (optional) and compressor synchronization; ensures maximum reliability by monitoring the most important parameters of the dryer; and offers impressive control and monitoring capabilities.

Technical specifications for PE 760S up to PE 3390S (standard version, PDP -40 °C)							
Specification	Unit	PE 760 S	PE 1020 S	PE 1330 S	PE 2060 S	PE 2670 S	PE 3390 S
Nominal volume flow at dryer inlet ^{(1) (2)}	l/s	360	480	630	970	1260	1600
	m³/hr	1296	1728	2268	3492	4536	5760
Average purge air consumption	%	10	10	10	10	10	10
Pressure drop at max. flow	barg	0.27	0.17	0.17	0.17	0.17	0.11
	psig	3.92	2.47	2.47	2.47	2.47	1.60
Inlet and outlet connections	PN16	DN 50	DN 80	DN 80	DN 100	DN 100	DN 150
Optional pre & after filter sizes ⁽³⁾	Fine filter	PMH G 1189	PMH G 1529	PMH G 2125	FF 2 G HE	FF 3 G HE	FF 4 G HE
	Super fine filter	PMH C 1189	PMH C 1529	PMH C 2125	FF 2 C HE	FF 3 C HE	FF 4 C HE
	Dust filter	PMH S 1189	PMH S 1529	PMH S 2125	FF 2 S HE	FF 3 S HE	FF 4 S HE
Mass	kg	820	1130	1410	2280	2750	3560
	lbs	1808	2491	3109	5027	6063	7848
Height	mm	1829	2558	2612	2702	2684	2603
	inch	72	101	103	106	106	102
Width	mm	1075	930	930	1085	1085	1342
	inch	42	37	37	43	43	53
Length	mm	1100	1764	1884	2359	2472	2708
	inch	43	69	74	93	97	107

1. Flow is measured at reference conditions: 1 bara and 20°C at operating pressure of 7 barg, inlet temperature 35°C & std PDP of -40°C at the outlet.

2. Dryer designed for mentioned volume flow, based on average duty of 80%.

3. Filters are sized at reference conditions. Consult the AML of the filters for sizing outside the reference conditions.

Correction factor Kp x Kt for -40°C PDP							
T inlet	Working pressure barg (psig)						
°C (°F)	4.5 (65)	5 (73)	6 (87)	7 (102)	8 (116)	9 (131)	10 (145)
<=20 (68)	"1,00"						
25 (77)							
30 (86)							
35 (95)							
40 (104)	0.89	0.87	0.88	0.71	0.8	0.89	0.98
45 (113)	0.42	0.5	0.62	0.49	0.55	0.61	0.67

Notes for PDP-40 variants

1) Correction factors are for 100% saturated compressed air

Correction factor Kp x Kt for -70°C PDP							
T inlet	Working pressure barg (psig)						
°C (°F)	4.5 (65)	5 (73)	6 (87)	7 (102)	8 (116)	9 (113)	10 (145)
<=20 (68)	"1,00"						
25 (77)							
30 (86)							
35 (95)							
40 (104)	0.89	0.87	0.88	0.76	0.86	0.95	
45 (113)	0.45	0.53	0.67	0.58	0.65	0.73	0.80

Notes for PDP-70 variants

1) Correction factors are for 80% saturated compressed air

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

Features & Benefits

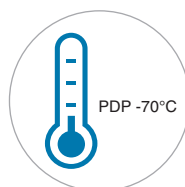
- ▶ Advanced energy management for lowest operating costs
 - Compressor synchronization
 - PDP control
 - Regeneration & cooling temperature control
 - Purge nozzle optimization (optional)
- ▶ Zero-purge variants for lowest life-cycle costs
 - Purge back-up mode for ambient conditions outside of limitations
- ▶ 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 (-70°C/-94°F only with Purge Cooled option)
- ▶ Pressure range: 4-14 barg/58-203 psig
- ▶ Ambient temperature range: 1-45°C/34-113°F
- ▶ Inlet temperature range: 1-50°C/34-122°F
- ▶ Power supply: 400VAC 50Hz; 440-460VAC 60Hz



Options



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



Reverse in and outlet pipe



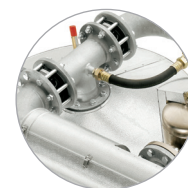
NEMA 4 electrical enclosure



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 barg/210 psig (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	PB 210 HE ZP	PB 320 HE ZP	PB 390 HE ZP	PB 530 HE ZP	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 ⁽¹⁾	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	barg	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	psig	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"
Included pre and after filters	Fine filter	TF 6 G HE	TF 7 G HE	TF 8 G HE	TF 9 G HE	TF 9 G HE	TF 6 G HE	TF 7 G HE	TF 8 G HE	TF 9 G HE	TF 9 G HE
	Super fine filter	TF 6 C HE	TF 7 C HE	TF 8 C HE	TF 9 C HE	TF 9 C HE	TF 6 C HE	TF 7 C HE	TF 8 C HE	TF 9 C HE	TF 9 C HE
	Dust filter	TF 6 S HE	TF 7 S HE	TF 8 S HE	TF 9 S HE	TF 9 S HE	TF 6 S HE	TF 7 S HE	TF 8 S HE	TF 9 S HE	TF 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
	lbs	1411	1499	1565	1709	1808	882	1098	1184	1462	1687

1. Flow is measured at reference conditions: 1 barg and 20°C at operating pressure of 7 barg, 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	barg	4.5	5	6	7	8	9	10	11	12	13	14
	psig	65	72	87	100	116	130	145	160	174	189	203
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

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 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 Pressure Dew Point (For 11 barg Units)

Dew point	°C	0	-40	-70
	°F	32	-40	-94
Dew point correction factor	Kdp	1	1	0.8

For accurate sizing for your operating conditions consult Pneumatech

PB 760-7400 HE (P/ZP) - Blower purge/Zero purge adsorption dryers

Features & Benefits

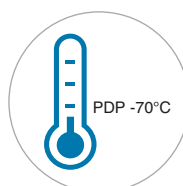
- ▶ Smart Cycle Control algorithm delivers energy savings at partial load without dew point sensor (optional)
- ▶ Advanced energy management for low operating costs with compressor synchronization and optional PDP control, regeneration & cooling temperature control, and purge nozzle optimization
- ▶ Optimal control and monitoring thanks to Purelogic™ Touch Controller
- ▶ High quality, high-efficiency, long-life desiccant ensures a PDP of $-40^{\circ}\text{C}/-40^{\circ}\text{F}$ as standard ($-70^{\circ}\text{C}/-94^{\circ}\text{F}$ as option)
- ▶ Minimal risk of crushed desiccant thanks to the sonic nozzle and the large welded vessels
- ▶ Counter-current regeneration for optimal energy efficiency and guaranteed dry air
- ▶ In-house developed and endurance tested components ensure high reliability and low maintenance (four-way and switching valves)
- ▶ The electric heater's design and stainless-steel, insulated build ensure optimal flow, energy efficiency and a long lifetime
- ▶ Compact base frame with forklift slots designed to save floor space
- ▶ Galvanized pipes with flanged connections simplify maintenance and minimize the risk of leakage

General Specifications

- ▶ Blower purge & zero purge adsorption dryers: welded vessel design
- ▶ Dew points achievable: $-40^{\circ}\text{C}/-40^{\circ}\text{F}$ & $-70^{\circ}\text{C}/-94^{\circ}\text{F}$
- ▶ Pressure range: 4.5-10 barg/65-145 psig; PB 4450 & 7400 HE 4.5-9 barg/130 psig (4.5-14.5 barg/65-210 psig available upon request for all models)
- ▶ Ambient temperature range: $1-40^{\circ}\text{C}/34-104^{\circ}\text{F}$ (for temperatures above 40°C and up to 55°C , see high ambient temperature option)
- ▶ Inlet temperature range: $1-45^{\circ}\text{C}/34-113^{\circ}\text{F}$ (for temperatures above 45°C , see high inlet temperature option)
- ▶ Power supply: 400 VAC 50 HZ; 440-460 VAC 60 HZ



Options



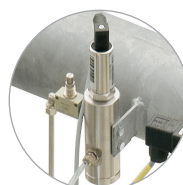
-70°C PDP variant available
(only for ZP variants)



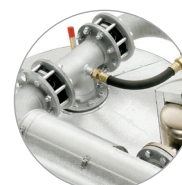
Insulated vessels
(std on -70°C PDP Variant)



Inlet blower filters



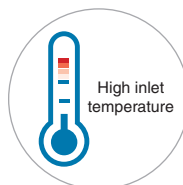
2nd PDP read out



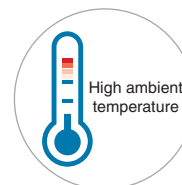
Purge nozzle optimization



External pilot air connection for low pressure inlet



High inlet temperature variant
(not applicable on -70°C PDP)



High ambient temperature variant



In and outlet filters



Vessel safety valves



Wooden packaging

The Pneumatech PB 760-7400 HE delivers a low PDP of -40°C/-40°F as standard (-70°C/-94°F optional) with minimal lifecycle costs. The range comes in blower purge and two zero purge variants, each offering flows up to 12,600 m³/hr. The PB HE

keeps your operating costs to a minimum thanks to the superior efficiency of its multiple layered high-efficiency desiccant, its advanced Purelogic™ Touch control features, and its new and unique Smart Cycle Control algorithm.

Adsorption dryer technology

Adsorption dryers remove moisture from compressed air by passing it through one of two towers filled with desiccant. When the desiccant in one tower is saturated, PB HE dryers use heated blower purge air to remove the moisture from the adsorbent

material (while the other tower handles the drying). That means they have no purge loss during regeneration. The zero purge variants reduce lifecycle costs even further by also eliminating purge loss during cooling.

Technical specifications for PB 760-7400 HE (standard version, PDP -40°C)

Specifications	Unit ⁽³⁾	PB 760 HE	PB 1000 HE	PB 1350 HE	PB 2050 HE	PB 2650 HE	PB 3400 HE	PB 4450 HE	PB 5300 HE	PB 7400 HE
Cooling mode	-	Purge	Purge	Purge	Purge	Purge	Purge	Purge	Purge	Purge
Nominal flow at dryer inlet ⁽¹⁾	l/s	360	480	630	970	1260	1600	2100	2500	3500
	m ³ /h	1296	1728	2268	3492	4536	5760	7560	9000	12600
Avg purge air consumption	%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Pressure drop over the dryer	barg	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.2	0.2
	psig	2.61	2.61	2.61	2.61	2.61	2.61	2.61	2.9	2.9
Inlet and outlet connections	DN acc to DIN2633 PN16	80	80	80	100	100	150	150	150	200
Optional pre & after filter sizes ⁽²⁾	Fine filter	PMH G 1529	PMH G 2125	PMH G 2550	FF 3 G HE	FF 4 G HE	FF 5 G HE	FF 6 G HE	FF 7 G HE	FF 8 G HE
	Super fine filter	PMH C 1529	PMH C 2125	PMH C 2550	FF 3 C HE	FF 4 C HE	FF 5 C HE	FF 6 C HE	FF 7 C HE	FF 8 C HE
	Dust filter	PMH S 1529	PMH S 2125	PMH S 2550	FF 3 S HE	FF 4 S HE	FF 5 S HE	FF 6 S HE	FF 7 S HE	FF 8 S HE
Mass	Kg	1663	1741	2130	3009	3660	4862	5592	6682	8655
	Lb	3666	3838	4696	6634	8069	10719	12328	14731	19081
Height	mm	2585	2585	2707	2717	2700.6	2591	2587.5	2631	2990
	Inch	101.7	101.7	106.6	107	106.3	102	101.8	103.6	117.7
Width	mm	960	960	948	1000	1715.6	2374	2448.5	2629	2739
	Inch	37.8	37.8	37.3	39.4	67.5	93.5	96.4	103.5	107.8
Length	mm	1776	1776	1884	2359	2382	2448.5	2874.5	2458.5	3532
	Inch	69.9	69.9	74.2	92.9	93.8	96.4	113.1	96.8	139

(1) Flow is measured at reference conditions: 1 bara and 20°C at operating pressure of 7 barg, inlet temperature 35°C & std PDP of -40°C at the outlet

(2) Filters are sized at reference conditions. Consult the AML of the filters for sizing outside the reference conditions and for other filters models

(3) For ZP (zero purge) units consult the AML

3 versions to meet your needs

Choose the PB HE that works best for you:

- 1 Purge models with standard cooling, using a small amount of dry air.
- 2 Zero purge models with open loop cooling, using a blower to cool down with ambient fresh air. This is more energy-efficient compared to standard cooling as no compressed air is lost. It is also the ideal choice for moderate climates.
- 3 Zero purge models with closed loop cooling, using an additional air or water cooler. The cooling air runs in a closed loop, preventing the desiccant to become pre-saturated with moisture from the ambient air. This is the best choice for hot and humid climates.