



Blower Purge Desiccant Compressed Air Dryers

ZP Series



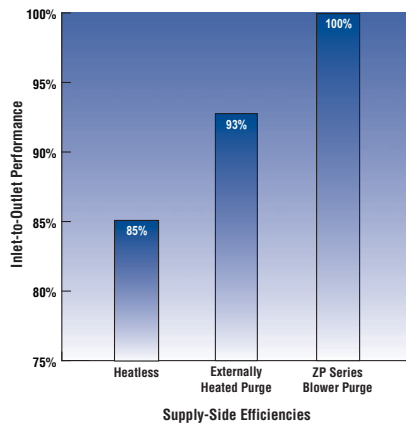
SPX Air Treatment

ZP Series Dryers... Produce 100% Efficient Air Systems

Compressed air users rely on Deltech to provide compressed air treatment solutions for applications around the world. ZP Series dryers improve air system efficiency by the use of a dedicated axial blower, instead of a percentage of dehydrated purge air, to regenerate the off-line desiccant tower. ISO 8573.1 Class 2 (-40°F/-40°C) dew point performance is guaranteed.

The Deltech Guarantee

Deltech guarantees that ZP Series dryers will produce the design dew point while operating continuously at maximum rated flow (100% duty cycle) at CAGI ADF 200 inlet standards of 100°F inlet temperature and 100% relative humidity at 100 psig.



Reduce Energy Consumption

As the air compressor is the most costly system component to purchase and, it uses more electrical energy than the rest of the system combined, it is wise to ensure that the smallest air compressor is installed. ZP Series dryers are 100% efficient at delivering full supply-side compressor capacity. Therefore, users benefit from the ability to purchase a less expensive air compressor and, a 20% reduction in compressor operating costs.

Eliminate Costly Compressed Air Loss

Global competition, spiraling energy costs and, the challenge to “do more, with less” require manufacturers to closely examine operating costs. Compressed air generation tends to be the most costly utility within a facility. Eliminate air loss to align supply-side equipment with demand-side requirements to optimize your air system.

Demand-Side Impact on Supply-Side Dryer Types

Plant Air Demand (scfm)	Dryer Types (efficiency)	Air Volume Required to Meet Demand (scfm)	Air Compressor Needed to Meet Air Volume (HP)		Compressed Purge Air Penalty* (Dollars)	Preferred Supply-Side Solution
1000	Blower Purge (100%)	1,000	200	1,000	\$0	Yes
1000	Heated Purge (93%)	1,075	250	1250	\$11,436	No
1000	Heatless (85%)	1,176	250	1250	\$24,506	No

* Assumes 5 scfm/HP, 8760 hours of operation per year, 10 cents per kW/h

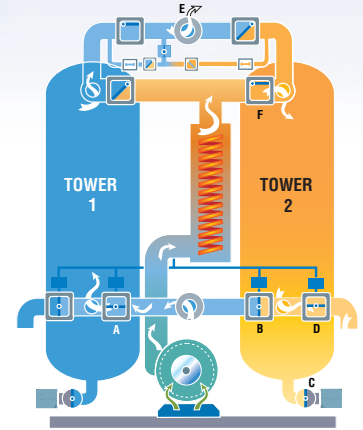
ISO 8573.1 Quality Classes

Class	Solid Particles, (d μm)			Pressure Dew Point		Oil, Aerosol, Liquid Vapor	
	0.10 < d ≤ 0.5	0.5 < d ≤ 1.0	1.0 < d ≤ 5.0	°C	°F	mg/m ³	ppm w/w
0	As Specified			As Specified		As Specified	
1	100	1	0	≤ -70	-94	≤ 0.01	0.008
2	100,000	1,000	10	≤ -40	-40	≤ 0.1	0.08
3	-	10,000	500	≤ -20	-4	≤ 1	0.8
4	-	-	1,000	≤ +3	38	≤ 5	4
5	-	-	20,000	≤ +7	45	> 5	> 4
6				≤ +10		50	
Liquid Water g/m ³							
7				C _w ≤ 0.5			
8				0.5 < C _w ≤ 5			
9				5 < C _w ≤ 10			

Per ISO 8573-1: 2001(E)

How it Works

Filtered compressed air enters on-line desiccant-filled, drying Tower 1 through valve (A). Up-flow drying enables the desiccant to strip moisture from the airstream. Clean, dry compressed air exits through (E) to feed the air system. Tower 2 (shown in regeneration mode) valve (B) closed, depressurizes to atmosphere through muffler (C). Valves (D & F) open and the heater turns on. The high-efficiency blower draws ambient air and feeds it through the heater. The ambient airstream passes through valve (F) and flows downward through the moist desiccant in Tower 2, collecting water vapor before exiting valve (D). Once the desiccant is fully desorbed, the heater turns off. Valves (F & D) close and Tower 2 is repressurized. At a fixed time interval, valve (B) will open and Tower 2 will be placed on-line to dry the airstream and valve (A) will close. Operations will switch and Tower 1 will be regenerated.



Engineered Efficiency and Performance

Towers filled with extra, high-grade activated alumina to deliver superior performance

Standard Controls

- Tower Status
- Service Reminder
- Heater On
- Heater Temperature
- Desiccant Bed Temperature
- Failure to Switch
- RS 232

Easy-view vacuum fluorescent text display is visible under any condition

Premium quality inlet switching/purge exhaust butterfly valves for long life on 3" and larger. (High-performance pneumatic angle-seated valves for smaller sizes)



Soft-seated check valves for tight shutoff and durability

Low-watt density heater saves energy and prevents premature desiccant aging

High quality pressure gauges display left tower, right tower, and purge pressure

Function indicator LEDs for easy monitoring

NEMA 4 Construction

Quiet, energy efficient, high-capacity blowers

Features & Specifications

Product Features

Controller	Pressure Dew Point	EMS Control	Vacuum Fluorescent Text			Languages	Power Recovery	Dry Contacts	Overlay w/ Circuit Graphics & LED Indicators Alarm LEDs with Text Display				Options	
Model	ISO Class 2 -40°F (-40°C)	Automatic Energy Savings	Digital Dew Point Monitoring	High Humidity Alarm	2 Line, 16 Characters (high-visibility in darkness or sunlight)	English Spanish French	Automatic Restart after Power Loss	Remote Indication of Alarm	Tower Status (drying switchover heat, cool, etc.)	Tower Switchover, Failure (low heater temp/high heater temp)	Sensor Over-range & Under-range	Service Reminder	Vessel Insulation	Mounted Pre- and Afterfilters
Standard	S	—	—	—	S	S	S	S	S	S	S	S	0	0
Option A	S	S	—	S	S	S	S	S	S	S	S	S	0	0
Option B	S	S	S	S	S	S	S	S	S	S	S	S	0	0

S=Standard 0=Option

Engineering Data

Model*	Inlet Flow @ 100 psig, Blower 100°F ¹		Heater Rated Output	Average	Dimensions (inches)			Approx. Weight	Inlet/Outlet Connections	Prefilter Type CF	Afterfilter Type DTA
	scfm	kW			kW	kW	W				
ZP500	500	1.6	10	10.1	53	70	105	1866	2" NPT	D-0600-CF	DTA600
ZP600	600	2.5	12	12.7	55	71	108	2111	2" NPT	D-0600-CF	DTA600
ZP750	750	2.2	14	14.8	60	83	114	2456	3" FLG	D-1200-CF	DTA1200
ZP900	900	2.0	16	16.2	60	83	114	2472	3" FLG	D-1200-CF	DTA1200
ZP1050	1050	2.8	19	19.2	64	84	113	2981	3" FLG	D-1200-CF	DTA1200
ZP1300	1300	5.3	23	25.7	66	85	118	3576	3" FLG	D-1500-CF	DTA1800
ZP1500	1500	7.5	28	32.8	80	93	116	5359	3" FLG	D-1500-CF	DTS1800
ZP1800	1800	7.0	32	35.4	80	93	116	5359	3" FLG	D-2000-CF	DTA1800
ZP2200	2200	5.6	39	41.9	85	104	124	8018	4" FLG	D-2400-CF	DTA2400
ZP2600	2600	10.3	45	50.7	85	104	124	8123	4" FLG	D-3000-CF	DTA3000
ZP3200	3200	2.8	53	52.5	97	117	121	9333	6" FLG	D-4000-CF	DTA4800
ZP3600	3600	4.0	58	59.4	97	117	128	9833	6" FLG	D-4000-CF	DTA4800
ZP4300	4300	4.4	70	70.4	105	130	124	12350	6" FLG	D-5000-CF	DTA4800

¹ Performance data per CAGI Standard ADF 200 for Desiccant Compressed Air Dryer. Rating conditions are 100°F (37.8°C) inlet 100 psig (6.9 bar) inlet pressure, 100% relative humidity, 100°F (37.8°C) ambient temperature, and 5 psi (0.35 bar) pressure drop.

* Consult factory for larger models.

Inlet Flow

Inlet Flow capacities shown in the Specifications Table have been established at an inlet pressure of 100 psig (7kgf/cm²) and a saturated inlet temperature of 100°F (38°C). To determine maximum inlet flow at other conditions, multiply the inlet flow from the Specifications Table by the multiplier from Table 1 that corresponds to your operating conditions.

Dew Point

Outlet pressure dew point at rated inlet conditions of 100 psig (7kgf/cm²) and 100°F (38°C) saturated. Dew point varies slightly at other conditions. Consult the factory to determine exact outlet pressure dew point at your operating conditions.

Table 1

Pressure psig (kgf/cm ²)	Inlet Temperature °F (°C)						
	60 (15.6)	70 (21.1)	80 (26.7)	90 (32.2)	100 (37.8)	110 (43.3)	120 (48.9)
60 (4.2)	1.03	1.01	0.99	0.80	0.58	0.43	0.32
70 (4.9)	1.10	1.08	1.07	0.94	0.68	0.50	0.37
80 (5.6)	1.17	1.15	1.14	1.08	0.79	0.58	0.43
90 (6.3)	1.24	1.22	1.20	1.18	0.89	0.66	0.49
100 (7.0)	1.30	1.28	1.26	1.24	1.00	0.74	0.55
110 (7.7)	1.36	1.34	1.32	1.30	1.11	0.82	0.61
120 (8.4)	1.42	1.40	1.38	1.36	1.22	0.90	0.67
130 (9.1)	1.48	1.46	1.44	1.42	1.33	0.99	0.74
140 (9.8)	1.53	1.51	1.49	1.47	1.44	1.07	0.80
150 (10.6)	1.58	1.56	1.54	1.52	1.50	1.16	0.87

Operating Conditions

ZP Models	max. working press.	min. operating press.	max. inlet air temp.	min. inlet air temp.	max. ambient temp.	min. ambient temp.
	psig	psig				
500-4300	150	60	120°F	40°F	120°F	40°F



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