KEMP
kemp-spx.com

BLOWER PURGE DESICCANT COMPRESSED AIR DRYERS

KZP SERIES

KZP SERIES DRYERS PRODUCE 100% EFFICIENT AIR SYSTEMS

For decades, compressed air users have relied on Kemp to deliver technology that reduces the cost of operation and improves the reliability of air driven processes. KZP 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 offline desiccant tower. ISO 8573.1 Class 2 (-40°F/-40°C) dew point performance is guaranteed.

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 system combined, it is wise to ensure that the smallest air compressor is installed. KZP 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.

THE KEMP GUARANTEE

Kemp desiccant dryers are guaranteed to 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.

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

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

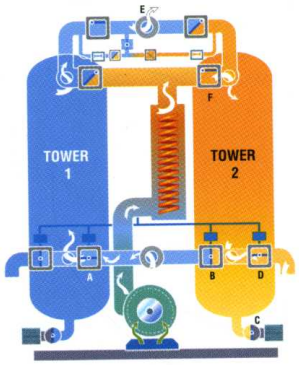
ISO 8573.1 AIR QUALITY STANDARDS

Class	Solid Particles, (d mm)			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/m³	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/m³			
7				C_w ≦ 0.5			
8				0.5 < C ≦ 05			
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 air stream. 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 air stream 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. Valve (D) closes 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 bed and valve (A) will close. Operations will switch and Tower 1 will be regenerated.



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

KZP SERIES FEATURES AND SPECIFICATIONS

KZP SERIES PRODUCT FEATURES

Controller Model	Pressure Dew Point ISO Class 2 -40°F (-40°C)	EMS Control Automatic Energy Savings	Vacuum Fluorescent Text Digital Dew Point Monitoring	High Humidity Alarm	2 Line, 16 Characters (high - visibility in darkness or sunlight)	Langs. English Spanish French	Power Recovery Automatic	Dry Contacts Remote Indication of Alarm	Overlay with Circuit Graphics & LED Indicators Alarm LED's with Text Display Pwr. On	Heater On	Tower Status (drying switchover heat cool, etc)	Tower Switch, Switchover Failure (low temp/high heater temp)	Sensor over-range & under-range	Service Reminder
Standard	✓	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Option A	✓	✓	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Option B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ - included

KZP SERIES PRODUCT SPECIFICATIONS

Model	Inlet Flow[1] @ 100 psig, 100°F scfm	Blower kW	Heater Rated Output kW	Average kW	Dimensions H	W inches	D	Approx. Weight lbs.	Inlet/Outlet Connections inches
500KZP	500	16	10	10.1	105	53	70	1900	2" NPT
600KZP	600	2.5	12	12.7	108	55	71	2200	2" NPT
750KZP	750	2.2	1	14.8	114	60	83	2500	3" FLG
900KZP	00	2	16	16.2	114	60	83	2600	3" FLG
1050KZP	1050	2.8	1	19.2	113	64	84	3000	3" FLG
1300KZP	1300	5.3	23	25.7	118	66	85	3600	3" FLG
1500KZP	1500	7.5	28	32.8	116	80	93	5400	3" FLG
1800KZP	1800	7	32	35.4	116	80	93	5500	3" FLG
2200KZP	2200	5.6	39	41.9	124	85	104	8100	4" FLG
2600KZP	2600	10.3	45	50.7	124	85	104	8200	4" FLG
3200KZP	3200	2.8	53	52.5	121	97	117	9400	6" FLG
3600KZP	3600	4	58	59.4	128	97	117	9900	6" FLG
4300KZP	4300	4.4	70	70.4	124	105	130	12350	6" FLG

INLET FLOW – Inlet Flow capacities shown in the Engineering Data 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.

1 Performance data per CAGI Standard ADF 200 for Dual-Stage Regenerative Desiccant Compressed Air Dryer. Rating conditions are 100°F (37.8°C) inlet temperature, 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.

TABLE 1

Pressure psig (fgf/cm²)	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

KZP Models	Max. working pressure	Min. operating pressure	Max. inlet air temp.	Min. inlet air temp.	Max. ambient temp.	Min. ambient temp.
500-4300	150 psig	60 psig	120°F	40°F	120°F	40°F

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Improvements and research are continuous at SPX Kemp.
Specifications may change without notice.

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