

ZEKS
COMPRESSED AIR SOLUTIONS®

ZHA - Heated Regeneration
150-8,000 SCFM

ZBB - Heated Blower Regeneration
150-8,000 SCFM

ECLIPSE™
Desiccant Air Dryers



www.zeks.com

Reliable Performance, Design Innovation... **ECLIPSE™** Desiccant Air Dryers

Before compressed air is used in production, finishing, or sensitive research or manufacturing processes, it must be treated to remove moisture and contaminants.

Without proper treatment, air may damage equipment and tools, reduce productivity and adversely affect the quality of finished goods.

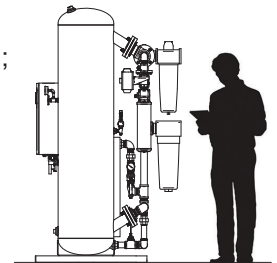
Eclipse™ desiccant dryers from ZEKS effectively and reliably dry compressed air to extremely low moisture levels for use in applications where the presence of even minimal moisture cannot be tolerated or where environmental conditions demand it.

Eclipse™ Desiccant Dryers remove moisture and contaminants from compressed air to make it useable where extremely high quality air is required. ZHA and ZBB Series dryers include best-in-class features for optimum performance, reliability, and accessibility for service:

- **High Performance Switching Valves** - High performance ball and butterfly valves are designed specifically for high temperature applications.
- **Downstream Purge** - Purge air flow from downstream source saves energy and increases air compressor life. (ZHA only)
- **Accessible Control Solenoids** - Solenoid valves are mounted externally; Push-To-Test functionality facilitates troubleshooting.
- **Optional Filter Packages** - Pre- and After-Filters available in several configurations. Bypasses also available for ease of dryer service.



- **Low Profile Design** - Permits installation in low clearance areas; Serviceable parts are positioned within reach, reducing service time and enhancing safety.



Eclipse™ manifold positioning facilitates maintenance and improves worker safety compared to competitive designs.



2100ZHA shown in standard configuration.

ZEKS Distributors are trained to assist selection of the Eclipse™ model that will satisfy all application requirements and provide the most favorable energy use profile and long-term reliability.

Eclipse™ Dryer Controls

Eclipse™ dryers are equipped to give the user precise dryer control and access to real-time dryer status information.

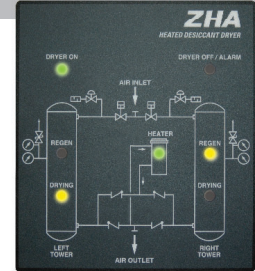
ZHA Series

Digital Controller

- Backlit LCD
- External Communication
 - Modbus/RS-232 port
- Maintenance Reminders
- Fault Storage

DynOptic™ Display

- Dryer ON
- Tower Status
- Alarm Annunciation
- Heater Status
- Remote Alarm Contact



ZBB Series

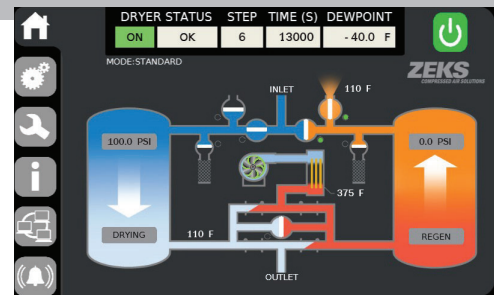
Intuitive 7" Color Touchscreen

- Real-time Valve Position
- Real-time Tower Status
- Critical Pressure Readings
- Critical Temperature Readings
- Dew Point Display (Optional 150-2,700; Standard 3,000-8,000)

- Touch Access To:
 - Alarm and Event History
 - Communications Setup
 - Dryer Run History
 - Maintenance Log

Communications

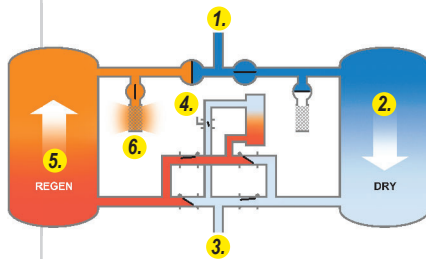
- Ethernet
- Modbus via RS-485



Eclipse™ Dryer Operation

Compressed air drying and desiccant regeneration are completed simultaneously in a timed cycle that alternates between the left and right dryer towers for uninterrupted compressed air treatment.

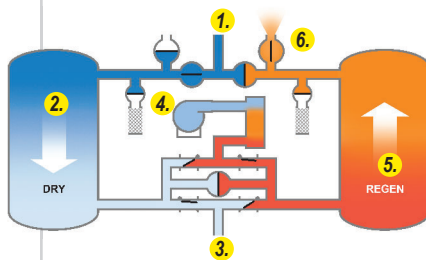
ZHA models use a portion of dry compressed air that is heated for desiccant regeneration.



1. Moisture-laden compressed air enters the ZHA dryer.
2. Valves are configured to direct the air through the online (Drying) tower. Moisture is removed as air flows through the desiccant media (adsorption) that is within the towers. Heat-of-adsorption aids the process.
3. Dry air flows to downstream processes.
4. A portion of dried air is directed through the heater then into the offline tower (Regenerating).
5. Heated purge air flows counter-current through the offline tower to regenerate the desiccant media.
6. Moisture is exhausted to atmosphere.

Valves are reconfigured during the operating cycle to switch the Drying and Regenerating tower assignments.

ZBB models use a dedicated blower to generate atmospheric air flow for desiccant regeneration.



1. Moisture-laden compressed air enters the ZBB dryer.
2. Valves are configured to direct the air through the online (Drying) tower. Moisture is removed as air flows through the desiccant media (adsorption) that is within the towers. Heat-of-adsorption aids the process.
3. Dry air flows to downstream processes.
4. Purge air flow is generated by the blower and directed through the heater then into the offline (Regenerating) tower.
5. Heated purge air flows counter-current through the offline tower to regenerate the desiccant media.
6. Moisture is exhausted to atmosphere.

Valves are reconfigured during the operating cycle to switch the Drying and Regenerating tower assignments.

Standard Features (ZHA/ZBB):

- NEMA 4 Electrical Enclosure w/ Digital Controller
 - DPC Controller w/ DynOptic™ Panel (ZHA)
 - 7" Touchscreen (ZBB)
- High Performance Valves
- Stainless Steel Purge Valves - Position Indicator
- Tower Pressure and Temperature Gauges
- Failure to Shift Alarm
- Pressure Relief Valves
- Sound Attenuating Mufflers
- Incoloy Heaters
- High Efficiency Blowers (ZBB only)
- Downstream Purge (ZHA only)
- Blue Moisture Indicator
- Control Air Filtration and Pressure Regulation
- High Strength Activated Alumina Desiccant
- ASME Coded Towers
- Removable Stainless Steel Diffuser Screens
- Accessible Fill and Drain Ports

Optional Features (ZHA/ZBB):

- Moisture Load Control with Dew Point Display and High Dew Point Alarm (Standard on 3000ZBB and larger)
- High Humidity Alarm (Standard on 3000ZBB and larger)
- Power Saver (Standard on ZBB)
- Filter Packages:
 - 150-1,500 SCFM - Filters pre-installed on dryer
 - 1,800 SCFM and larger - Filters shipped separately for field installation ***
- -100 deg.F Dew Point (ZHA only)
- Stainless Steel Control Air Tubing
- Tower Insulation
- Custom Engineered Options

Specifications

MODEL	FLOW CAPACITY SCFM*		HEATER BLOWER		AIR CONNECTION IN/OUT	DIMENSIONS** INCHES			SHIPPING WEIGHT** LBS
	-40°F PDP	-100°F PDP	KW	HP		WIDTH	DEPTH	HEIGHT	
150ZHA	150	150	2.0	—	1.0" FPT	44.5	32.0	66.0	758
200ZHA	200	200	3.0	—	1.5" FPT	48.5	32.0	67.0	913
250ZHA	250	250	3.0	—	1.5" FPT	52.5	32.0	68.0	1,119
300ZHA	300	300	3.0	—	1.5" FPT	52.5	32.0	68.0	1,191
400ZHA	400	400	4.5	—	2.0" FPT	56.5	34.0	82.0	1,539
500ZHA	500	500	4.5	—	2.0" FPT	56.5	34.0	82.0	1,707
600ZHA	600	600	6.0	—	3.0" FPT	64.0	42.0	86.0	2,369
800ZHA	800	800	9.0	—	3.0" FPT	64.0	42.0	86.0	2,681
1000ZHA	1,000	1,000	9.0	—	3.0" FPT	78.5	46.5	80.0	3,043
1200ZHA	1,200	1,200	12.0	—	3.0" FPT	78.5	46.5	80.0	3,285
1500ZHA	1,500	1,500	15.0	—	3.0" FPT	84.0	55.0	92.0	4,480
1800ZHA	1,800	1,800	18.0	—	4.0" FLG	84.0	60.0	92.0	4,956
2100ZHA	2,100	2,100	18.0	—	4.0" FLG	84.0	60.0	92.0	5,350
3000ZHA	3,000	3,000	30.0	—	4.0" FLG	96.0	68.0	100.0	7,750
4000ZHA	4,000	4,000	36.0	—	6.0" FLG	102.0	80.0	92.0	10,950
5000ZHA	5,000	5,000	50.0	—	6.0" FLG	CF	CF	CF	CF
6000ZHA	6,000	6,000	60.0	—	6.0" FLG	CF	CF	CF	CF
8000ZHA	8,000	8,000	75.0	—	8.0" FLG	CF	CF	CF	CF
150ZBB	150	—	3.0	1.0	1.0" FPT	44.5	33.5	66.0	874
200ZBB	200	—	4.5	1.0	1.5" FPT	48.5	32.0	67.0	1,136
250ZBB	250	—	6.0	1.5	1.5" FPT	52.5	32.0	68.0	1,379
300ZBB	300	—	6.0	1.5	1.5" FPT	52.5	32.0	68.0	1,477
400ZBB	400	—	9.0	2.0	2.0" FPT	56.5	33.0	82.5	1,897
500ZBB	500	—	12.0	2.0	2.0" FPT	56.5	33.0	82.5	2,111
600ZBB	600	—	12.0	5.0	3.0" FPT	64.0	47.0	88.0	2,804
800ZBB	800	—	18.0	5.0	3.0" FPT	64.0	47.0	88.0	3,198
1000ZBB	1,000	—	24.0	7.5	3.0" FPT	78.5	49.0	80.0	3,767
1200ZBB	1,200	—	24.0	7.5	3.0" FPT	78.5	49.0	80.0	4,091
1500ZBB	1,500	—	30.0	15.0	3.0" FPT	98.0	55.0	92.0	5,515
1800ZBB	1,800	—	36.0	15.0	4.0" FLG	98.0	68.0	92.0	6,113
2100ZBB	2,100	—	45.0	15.0	4.0" FLG	98.0	68.0	92.0	6,911
2700ZBB	2,700	—	55.0	15.0	6.0" FLG	120.0	78.0	100.0	5,017
3000ZBB	3,000	—	60.0	20.0	6.0" FLG	120.0	78.0	100.0	5,504
4000ZBB	4,000	—	80.0	25.0	6.0" FLG	126.0	83.0	92.0	7,029
5000ZBB	5,000	—	100.0	30.0	6.0" FLG	138.0	87.0	97.0	7,520
6000ZBB	6,000	—	125.0	30.0	6.0" FLG	150.0	94.0	103.0	8,800
8000ZBA	8,000	—	175.0	40.0	8.0" FLG	168.0	98.0	105.0	11,976

Performance data obtained as per ISO 7183, Table 2, Option A2.

* Pressure Dew Point (PDP) at 100 psig, 100°F inlet air, 100°F ambient air.

Pressure vessels are designed and constructed in accordance with ASME requirements.

Working Pressure: Maximum = 150 psig; Minimum = 75 psig.

Desiccant: Factory-installed on 150-2100 ZHA/ZBB; Shipped loose with dryer for field installation on 2700-8000 ZHA/ZBB.

ZHA and ZBB dryers are wired for 460V-3Ph-60Hz electrical power.

** Dimensions and weights shown are for base models only.

Optional equipment may alter dryer dimensions and weights.

Dimensions and weights are approximate. Weights shown for 2,700-8,000 dryers do not include weight of desiccant.

*** Filter Packages for 1,800 SCFM and larger ZHA dryers include interconnecting piping.

Filter Packages for 1,800 SCFM and larger ZBB dryers do not include interconnecting piping.

CF = Consult Factory



Refer to ZEKS Product Warranty Policies And Procedures
(Based on annual 5-day per week, 3-shift operation.)

ZEKS Eclipse™ Desiccant Dryers are not designed, intended or approved for breathing air applications.

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COMPRESSED AIR SOLUTIONS®

1302 Goshen Parkway
West Chester, PA 19380

Phone: 610-692-9100 800-888-2323

Fax: 610-692-9192

Web: www.zeks.com