

ZEKS
COMPRESSED AIR SOLUTIONS®

HSHM Series
4000-24000 SCFM

MultiPlex™

Cycling Refrigerated Dryers
For Large Capacity Compressed Air Systems



- *Energy-Saving Cycling Operation*
- *Operational Redundancy Assures Continuous Air Treatment*
- *Environmentally-Friendly R454B Refrigerant*

With

R454B

Refrigerant

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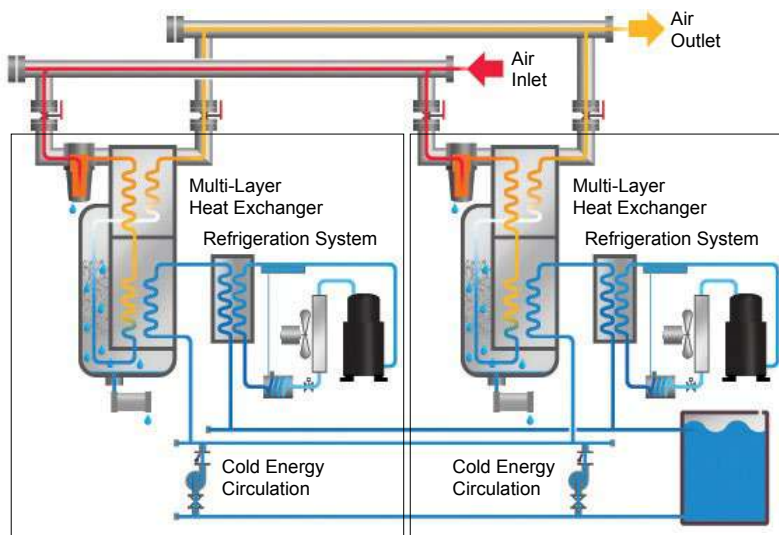
True-Cycling™ – The ZEKS Advantage

Common manufacturing practices, process machinery cycling, and changing production requirements result in uneven compressed air volume use.

This, combined with lower ambient and inlet air temperatures, results in a variable, reduced load on a compressed air dryer. ZEKS pioneered the thermal mass refrigerated dryer design and True-Cycling operation that efficiently stores cold energy. This is what allows the refrigeration compressors in MultiPlex dryers to cycle off during periods of reduced load while the dryer maintains the capacity to remove moisture and contaminants from the air stream. When compared to non-cycling dryers, MultiPlex dryers provide significant energy savings - as high as 50%!

Eliminate The Need For Multiple Dryers

A MultiPlex dryer is an assembly of multiple air treatment modules, each with a cycling refrigeration system, multi-layer heat exchanger and no air-loss drain system. A microprocessor Sequencer is utilized to monitor individual module performance while commanding overall operation of the dryer to optimize performance and reliability. This modular approach provides inherent redundancy of critical dryer components.



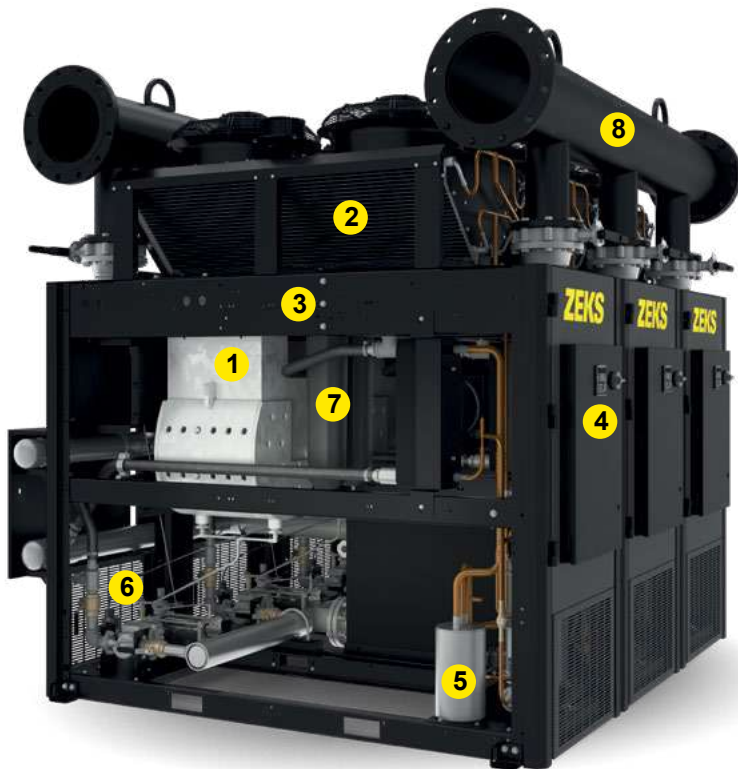
Two-module configuration depicted.

Designed For Continuous Duty

Each module is equipped with the means to isolate various systems within the dryer. Individual electrical disconnects permit module electrical components to be serviced while the standard air and water isolation valves and pump isolation valves allow servicing of critical dryer components, all while the balance of the dryer remains on-line.

Consistent Dew Point

The unique MultiPlex design enables users to maintain dryer operation even when one of the independent modules is taken off-line for service or maintenance. Properly sized, the dryer outlet pressure dew point will not be compromised if a single module is de-energized.



6,000 SCFM unit shown configured with air-cooled, microchannel refrigeration condensers. Side panels have been removed, revealing accessibility of serviceable parts

Balanced Operation – MultiPlex design includes a microprocessor Sequencer that's configured with a proprietary program that monitors the refrigerant compressor operating hours of each module, adjusting the chiller temperature set-points as needed to achieve uniform operating hours for each module. Additionally, the Sequencer permits:

- Remote operation via a field supplied remote contact.
- Remote monitoring for the operating parameters of each module and inlet/outlet compressed air conditions.
- Ethernet & Modbus communications for seamless integration with plant networks as standard.

Next Generation Design

- 1 Multi-Layer Heat Exchanger** – Proprietary Integrated Pre-Filter, Precooler/ Reheater, Chiller and Moisture Separator designed for maximum efficiency.
- 2 High Efficiency Refrigeration Condensers** – Microchannel air-cooled condensers allow increased heat rejection in a smaller footprint; top-mounted water-cooled condensers simplify installation and serviceability.
- 3 Optimized Air Circuit** – Precooler/Reheater assemblies are oversized to reduce air temperature entering chillers, saving energy.
- 4 Digital Performance Controller** – Micro-PLC provides access to and coordination of all dryer functions.
- 5 Scroll Compressors** – Provide quiet, balanced, reliable operation.
- 6 No Air-Loss Condensate Drains** – Pneumatically operated demand drains feature a large discharge port that resists clogging. Liquid level sensor communicates fault condition via module controller.
- 7 Integrated Filtration** – Dual-element filter removes particles as small as .1 micron from the airstream.
- 8 Versatile and Expandable** – MultiPlex modules share a single INLET and a single OUTLET air header, each with dual connection capability. This permits connection to either side of the dryer to suit site condition.



R454B Refrigerant – Low-GWP reduces environmental impact. Minimal refrigerant charge enhances reliability and sustainability.

In addition, MultiPlex dryers are engineered to address the ever-changing manufacturing environment. Because header center line position is common among all MultiPlex models, planned increase in air treatment capacity can be accommodated through addition of modules.

MultiPlex

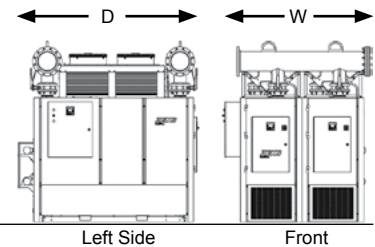
Cycling Refrigerated Dryers
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Standard Features

- **Air Isolation Valves** – Convenient separation of module air circuit from balance of dryer
- **Multi-Layer Heat Exchanger** – Proprietary design; Enhanced Precooler/Reheater; Low pressure drop
- **Advanced Digital Control** – Automatic dryer control; Drain Alarm; Performance and fault display
- **Master Sequencer** – Balances operation of each Module; Includes Modbus and Ethernet communications
- **Scroll Compressors** – Maintenance-free; Long service life
- **Internal Filtration (each Module)** – Assures high quality air
- **R454B Refrigerant** – Highly efficient; Small charge volume; Environmentally friendly
- **Efficient Refrigeration Condenser** – Air- or water-cooled; Top-Mounted
- **No Air-Loss Condensate Drains (each Module)** – Reliable condensate removal
- **Single Point Electrical Connection** – Simplifies service connection
- **Flexible Air Inlet/Outlet Connections** – Left or right configuration

Optional Features

- **NEMA 4 Electrical Protection Class** - Provides protection against splashing and hose-directed water.
- **Removable Head Condensers** - Permits cleaning of the condensers in applications where water has high concentrations of silt or particulate. Top-mounted for convenient access.



Technical Specifications

Model	Capacity SCFM*	# of Modules	Overall Dimensions**			Shipping Weight** LBS.	In/Out Air Connect Size	Operating kW*** AC	Operating kW*** WC	Refrigerant Type	Max Working Pressure	Voltage
			W IN.	D IN.	H IN.							
4000HSHM	4000	2	80.8	98.6	97.8	6937	8" FLG	19.3	13.6	R454B	200 PSIG	460/3/60
4800HSHM	4800	2	80.8	98.6	97.8	6979	8" FLG	24.7	15.4	R454B	200 PSIG	460/3/60
6000HSHM	6000	2	80.8	98.6	97.8	7572	8" FLG	30.7	20.3	R454B	200 PSIG	460/3/60
7200HSHM	7200	3	114.9	100.0	103.9	10124	10" FLG	36.9	23.0	R454B	200 PSIG	460/3/60
9000HSHM	9000	3	114.9	100.0	103.9	12194	10" FLG	46.0	30.4	R454B	200 PSIG	460/3/60
12000HSHM	12000	4	149.2	100.2	105.5	16682	14" FLG	61.3	40.4	R454B	200 PSIG	460/3/60
15000HSHM	15000	5	179.4	100.2	105.5	19624	14" FLG	76.6	50.5	R454B	200 PSIG	460/3/60
18000HSHM	18000	6	217.3	100.2	106.5	23081	14" FLG	91.8	60.6	R454B	200 PSIG	460/3/60
21000HSHM	21000	7	251.3	100.2	106.5	27365	14" FLG	107.1	70.6	R454B	200 PSIG	460/3/60
24000HSHM	24000	8	285.4	100.2	106.5	31661	14" FLG	122.4	80.7	R454B	200 PSIG	460/3/60

* Performance based on ISO 7183, table 2, option A2. (100 psig inlet air pressure; 100°F inlet air temperature; 100°F ambient air temperature; 100% Relative Humidity).

** Overall dimensions & shipping weights are for air cooled models. Consult engineering datasheets for water cooled data.

*** Average kilowatts per hour of dryer operation at full rated capacity. AC = Air-Cooled; WC = Water-Cooled. NEMA 1 electrical, standard.

ZEKS NC Series compressed air dryers are not designed, intended or approved for breathing air applications.

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