

# NC Series™

75–2,400 scfm Models

# Multi-Module™ Series

3,250–19,200 scfm Models

**NON-CYCLING REFRIGERATED  
COMPRESSED AIR DRYERS**

**Independently  
Verified  
Performance**  
(200-1000 scfm models)



# **NC Series™**

## **Refrigerated Compressed Air Dryers**

75-2,400 scfm

Compressed air is used commonly for powering tools and equipment, in production and finishing processes and to control valves and instruments. The compression process itself causes concentrations of water, compressor lubricant aerosols, and air-borne particulates to increase to levels that can damage tools, increase maintenance requirements or spoil finished product.

### **Efficient Operation**

NC Series™ dryers cool compressed air using a hermetically sealed refrigeration system. Moisture from the cool air condenses and is efficiently separated and discharged from the dryer. The result is clean, dry air that is suitable for the most demanding applications.

NC Series dryer components are sized and matched to enable consistent dew point at full or partial moisture loading in all industrial environments.

- **Fully hermetic refrigeration systems minimize maintenance requirements**
- **Generously sized condensers deliver rated performance even in elevated ambient temperatures**
- **ZEKS exclusive moisture separator design provides 99% separation efficiency without the maintenance requirement associated with the demister pads in some competitive units**
- **ZEKS CFX®-based precooler/reheater cools incoming compressed air reducing the load on the refrigeration system thereby minimizing energy costs**
- **ZEKS CFX®-based precooler/reheater warms outgoing compressed air thereby eliminating pipe sweating**



*NC Series™ model 400NCG shown in standard configuration.*

### **ZEKS Performance Has Been Independently Verified!**

Through participation in the Compressed Air and Gas Institute (CAGI) Performance Verification Program, actual performance and energy consumption of 200-1000 scfm NC Series™ dryers have been independently validated against CAGI Data Sheets. Visit [www.zeks.com](http://www.zeks.com) to view ZEKS refrigerated dryer Data Sheets.

**Insist upon a dryer with performance that has been independently validated.**

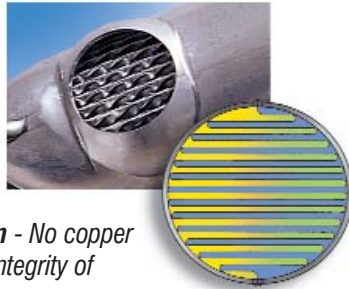


## The Standard of Excellence For Heat Exchanger Design

ZEKS patented CFX® stainless steel heat exchangers have been engineered exclusively for compressed air drying to include a high heat transfer coefficient and industry-leading low pressure drop.



A multi-path flow area that is 3–5 times that of the equivalent copper tube exchanger, combined with continuous self-cleaning action, minimize fouling potential. Corrosion resistant 304L stainless steel is used in all air and refrigeration circuit exchangers. CFX® Corrugated, Folded heat eXchangers provide durability in environments where copper or other metals are not suitable.



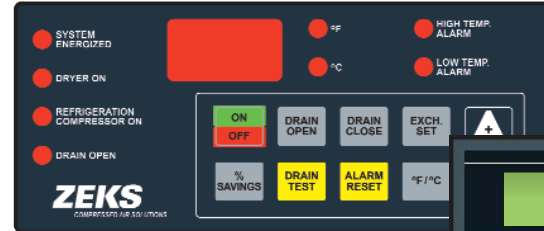
Protected under U.S. Patent Nos. 6,186,223 and 6,244,333

- **100% Stainless Steel Construction** - No copper brazed joints that compromise the integrity of the exchanger
- **Industry-Leading Low Pressure Drop** - Minimizes energy consumption and the need for greater compressor horsepower
- **Less Prone To Fouling Than Copper Or Aluminum Exchangers** - Maintains optimal performance
- **ZEKS Exclusive 10-Year Warranty** - A testament to the durability and efficiency of this robust component

### Durable Construction

Internal structural pieces of every NC Series and Multi-Module Series dryer are heavy gauge galvanized steel. Full cabinet is powder coated with removable panels for convenient service access to all internal components.

**...Engineered to maximize operating efficiency and provide continuous trouble-free service in a broad range of compressed air applications.**



Compustat - Standard on 500-800

### Electronic Performance Control

NC and Multi-Module Series dryer operation is automatically controlled to ensure continuous air treatment. Both the Compustat and DPC controllers enable the user to monitor the dryer refrigeration system as well as adjust condensate drain timing at the touch of a button.



DPC - Standard on 1000-2400, optional on 75-400

**Compustat** – Digital controller standard on 500-800 models. Includes LED display to communicate dryer operating status.

**DPC Controller** – Optional on 75-400 models. Enhanced version standard on 1000-2400 models. Includes backlit LCD to communicate dryer operating status.

**DPC Plus Controller** – Optional on 500-2400 models and standard on 3250-19200 models. Provides all the features of the DPC Controller, with the addition of air temperature and pressure displays.

Display of:	Dryer Model			
	75-400	500-800	1000-2400	3250-19200
• Chiller Temp.	0	S	S	S
• Refrig. Suction Pres.	S (Gauge)	S (Gauge)	S	S
• Refrig. Suction Temp.	NA	+	S	S
• Refrig. Discharge Pres.	NA	+	S	S
• Refrig. Comp. Running Time	0	+	S	S
• Dryer Running Time	0	+	S	S
• Diagnostic Memory	0	+	S	S
• Inlet Air Pres. and Temp.	NA	+	+	S
• Outlet Air Pres. and Temp.	NA	+	+	S
<b>Drain Time Adjustment</b>	0	S	S	S
<b>Automatic Dryer RESTART</b>	0	S	S	S
<b>Remote START/STOP-Ready</b>	0	S	S	S
<b>Remote Alarm Contact</b>	0	S	S	S
<b>MODBUS Communication-Ready</b>	0	+	S	S

S - Standard feature with either Compustat or DPC

0 - Option provided by DPC

NA - Not Applicable

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## NC Series™ and Multi-Module™ Series Features

### Standard:

- **Stainless Steel CFX® Heat Exchangers**  
Patented CFX® stainless steel heat exchangers used in all pre-cooler/reheater and chiller assemblies.
- **Fully Hermetic Refrigeration Compressor(s)**  
Quiet, reliable operation.
- **High Efficiency Moisture Separator**  
Collects condensate, eliminates moisture re-entrainment.
- **Timed Electric Condensate Drain**  
Fully adjustable with large port that resists clogging.
- **Electronic Performance Controller** (optional on 75-400)  
Enables performance modification and real-time monitoring of dryer functions.
- **Air Cooled Refrigeration Condenser** (75-2,400)  
Condenser is mounted to maximize air flow.
- **Water Cooled Refrigeration Condensers** (3,250-19,200)  
Internally mounted condenser in each module makes use of available cooling supply.
- **Multiple Electric Disconnects** (3,250-19,200)  
Enable isolation of individual modules for service while dryer remains operational.
- **Single Point Electric Service Connection**  
Minimizes installation cost.
- **Closed Frame Construction**  
Full powder coated cabinet protects internal components.
- **Air Circuit Pre-cooler/Reheater**  
Conditions air optimally for compressed air system.
- **Environmentally Friendly Refrigerant**  
NC and Multi-Module series dryers use environmentally friendly R-404A refrigerant (75-19,200 scfm).

### Optional:

- **Complete Stainless Steel Air Circuit**  
Complete corrosion protection.
- **NEMA 4/12 Electrics** (200-19,200)  
Water tight and dust tight enclosure for protection against rain, falling water, and washdown. Indoor and outdoor use.
- **Water Cooled Refrigeration Condenser** (200-2,400)  
Water cooled condenser makes use of available cooling supply.
- **Air Cooled Refrigeration Condensers** (3,250-19,200)  
Condensers maintain individual module efficiency in all ambient conditions.
- **Savair™ No Air-Loss Condensate Drain** (3,250-19,200)  
Fully adjustable with large port that resists clogging.
- **Removable Head Condensers** (3,250-19,200)  
Maintain refrigeration system efficiency. Units are top-mounted for convenient access. Use where cooling water is problematic.
- **CME Cold Mist Eliminator** (200-400)  
99% removal of air compressor lubricant carryover.

### Exclusive Warranty

In addition to the standard warranty on all NC Series™ and Multi-Module™ Series dryers, the refrigeration compressor is warranted for five years and the CFX® heat exchangers for ten years.

*Refer to ZEKs Product Warranty Policies and Procedures.*

## Sizing and Selection

Dryer selection is based on matching dryer treatment capacity to the total maximum compressed air volume (scfm). Select a model that has the required treatment capacity (scfm) from the Technical Specifications Charts. Use the following Correction Factors to select a model that provides the required dew point for an application that deviates from the standard ISO 7183 rating conditions (selection example provided):

### Dryer Selection Example

		<i>Inlet Air Temperature</i>	<i>Correction Factor</i>	<i>Inlet Air Pressure</i>	<i>Correction Factor</i>	<i>Ambient Air Temperature</i>	<i>Correction Factor</i>
Air Volume Requirement:	<b>375 scfm</b>	80°F	.61	50 psig	1.29	80°F	.80
Inlet Air Temperature:	<b>110°F</b>	90°F	.79	75 psig	1.10	<b>90°F</b>	<b>.89</b>
Inlet Air Pressure:	<b>150 psig</b>	100°F	1.00	100 psig	1.00	100°F	1.00
Ambient Air Temperature:	<b>90°F</b>	<b>110°F</b>	<b>1.23</b>	<b>150 psig</b>	<b>0.86</b>	110°F	1.16
		120°F	1.51	250 psig	.79	120°F	1.30

Corrected scfm can be calculated with the correction factors:

$$1.23 \times .86 \times .89 \times 375 \text{ scfm} = 353 \text{ scfm corrected}$$

Select the model that matches or exceeds the corrected treatment capacity (scfm).

For the example given, it is model 400NCG delivering 38°F PDP.

See *Technical Specification Charts on back page.*

# **Multi-Module Series™**

Refrigerated Compressed Air Dryers

3,250-19,200 scfm

## **Built-In Redundancy Provides Superior High Volume Air Treatment**

For large volume compressed air applications, Multi-Module Series™ dryers provide all the benefits of NC Series™ dryers plus:

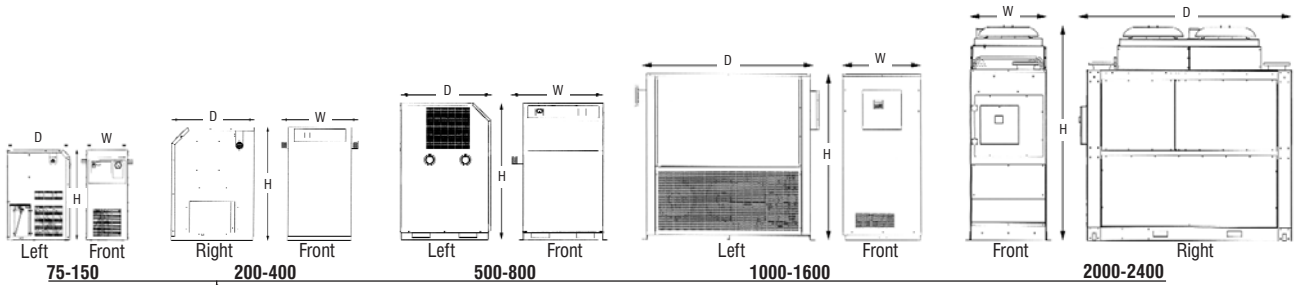
**Redundancy** – Eliminates the need for multiple air dryers. Two, or more, air treatment modules are integrated to form eleven dryer models with air treatment capacities from 3,250 - 19,200 scfm. Modules share a single INLET header and a single OUTLET header, each with dual connection capability, for installation versatility. Individual electrical disconnects on each module enable the dryer to remain operational and continue to provide compressed air treatment even if a module must be isolated for service or repair.

**Expandability** – Header centerline position is common among all Multi-Module™ models. This feature, along with the modular design, allows the customer to “bolt on” additional modules to expand air treatment capacity as operations expand.

Multi-Module™ dryers are engineered to address the ever-changing manufacturing environment.



*Multi-Module Series™ model 4000NCFM  
shown configured with water cooled refrigeration condensers.*



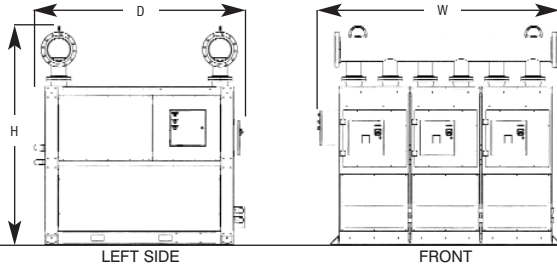
**NC Series™**

**Technical Specifications**

MODEL	CAPACITY*		PRESSURE DROP**	DIMENSIONS			SHIP WEIGHT		AIR CONNECT IN/OUT	DRAIN CONNECT FPT	REFRIG COMP		OPERATING KW***		REFRIG TYPE	MAX WORKING PRESSURE	VOLTAGES
	38°F PDP	50°F PDP		W IN.	D IN.	H IN.	AIR COOL LBS.	WATER COOL LBS.			AIR COOL HP	WATER COOL HP	AIR COOL	WATER COOL			
75NCG	75	103	1.3	14	21	31	145	NA	1" MPT	1/4"	.3	NA	.67	NA	R404	300 psig	115-1-60 208/230-1-60 220-1-50
100NCG	100	138	2.5	14	21	31	150	NA	1" MPT	1/4"	.5	NA	1.03	NA	R404	300 psig	
125NCG	125	172	2.0	14	21	31	180	NA	1 1/2" MPT	1/4"	.6	NA	1.27	NA	R404	300 psig	
150NCG	150	207	2.6	14	21	31	200	NA	1 1/2" MPT	1/4"	.6	NA	1.27	NA	R404	300 psig	
200NCG	200	276	1.6	23	31	40	410	360	1 1/2" MPT	1/4"	1.0	1.0	1.7	1.34	R404	300 psig	208/230-3-60 220-3-60 460-3-60 380-3-50 575-3-60
250NCG	250	345	2.0	23	31	40	430	380	1 1/2" MPT	1/4"	1.0	1.0	1.6	1.25	R404	300 psig	
300NCG	300	414	2.0	23	31	40	450	400	2" MPT	1/4"	1.5	1.5	2.11	1.67	R404	300 psig	
400NCG	400	552	2.9	23	31	40	490	440	2" MPT	1/4"	2.5	2.5	3.48	2.88	R404	300 psig	
500NCE	500	690	2.9	42	40	62	770	720	3" MPT	1/4"	2.5	2.5	3.59	2.88	R404	300 psig	
600NCE	600	828	3.0	42	40	62	890	820	3" MPT	1/4"	3.0	3.0	4.5	3.71	R404	300 psig	
700NCE	700	966	2.7	42	40	62	890	840	3" MPT	1/4"	3.5	3.5	5.38	4.24	R404	300 psig	
800NCE	800	1,104	3.0	42	40	62	900	850	3" MPT	1/4"	4.0	4.0	5.59	4.54	R404	300 psig	
1000NCF	1,000	1,380	2.4	32	72	69	1,705	1,630	4" FLG	1/4"	5.0	5.0	6.5	6.1	R404	220 psig	
1200NCF	1,200	1,656	3.1	32	72	69	1,710	1,630	4" FLG	1/4"	6.5	5.0	9.5	6.1	R404	220 psig	
1600NCF	1,600	2,208	3.3	32	72	69	1,870	1,790	4" FLG	1/4"	8.0	6.5	11.3	7.7	R404	220 psig	
2000NCF	2,000	2,760	3.5	32	91	90.68	2,770	2,690	6" FLG	1/4"	10.5	8.0	13.8	9.0	R404	220 psig	
2400NCF	2,400	3,312	4.8	32	91	90.68	2,800	2,720	6" FLG	1/4"	12.0	10.5	16.2	11.7	R404	220 psig	

Overall dimensions indicated.

Air, electric service, and drain connection configurations vary per model. Contact factory for details.



Overall dimensions indicated.

Air INLET and OUTLET header centerline remains consistent throughout the Multi-Module Series™ model range.

Module number varies depending on model. See last column in Technical Specifications chart to identify modules per model. 3-module model depicted in this illustration.

**Multi-Module Series™**  
**Technical Specifications**

MODEL	CAPACITY*		PRESSURE DROP**	OVERALL DIMENSIONS			SHIP WEIGHT LBS.	CONNECT SIZE IN/OUT	DRAIN (QTY) SIZE FPT	REFRIG COMP		H <sub>2</sub> O FLOW GPM @85°F	H <sub>2</sub> O CONN	OPERATING KW***		NUMBER OF MODULES
	38°F PDP	50°F PDP		W IN.	D IN.	H IN.				AIR COOL (QTY) HP	WATER COOL (QTY) HP			AIR COOL	WATER COOL	
3250NCFM	3,250		3.4	76.5	96	100.2	4,800	8" FLG	(2) 1/2"	(2) 8.0	(2) 6.5	42	1.5 NPT	22.6	15.4	2
4000NCFM	4,000		3.5	76.5	96	100.2	5,000	8" FLG	(2) 1/2"	(2) 10.5	(2) 8.0	52	1.5 NPT	27.6	18.0	2
4800NCFM	4,800		4.8	76.5	96	100.2	5,500	8" FLG	(2) 1/2"	(2) 12.0	(2) 10.5	68	1.5 NPT	32.4	23.4	2
6000NCFM	6,000		2.6	110.25	98	99.53	7,500	10" FLG	(3) 1/2"	(3) 10.5	(3) 8.0	78	2.0 NPT	41.4	27.0	3
7200NCFM	7,200		4.8	110.25	98	99.53	8,000	10" FLG	(3) 1/2"	(3) 12.0	(3) 10.5	102	2.0 NPT	48.6	35.1	3
8000NCFM	8,000		3.5	148	100	102	9,000	12" FLG	(4) 1/2"	(4) 10.5	(4) 8.0	104	2.5 NPT	55.2	36.0	4
9600NCFM	9,600		4.8	148	100	102	10,000	12" FLG	(4) 1/2"	(4) 12.0	(4) 10.5	136	2.5 NPT	64.8	46.8	4
12000NCFM	12,000		4.3	175.5	102	103	14,000	14" FLG	(5) 1/2"	(5) 12.0	(5) 10.5	170	3.0 FLG	81.0	58.5	5
14400NCFM	14,400		4.3	210.5	100	103	17,000	14" FLG	(6) 1/2"	(6) 12.0	(6) 10.5	204	3.0 FLG	97.2	70.2	6
16800NCFM	16,800		4.8	242	104	106	21,000	16" FLG	(7) 1/2"	(7) 12.0	(7) 10.5	238	4.0 FLG	113.4	81.9	7
19200NCFM	19,200		4.8	275	104	106	25,000	16" FLG	(8) 1/2"	(8) 12.0	(8) 10.5	272	4.0 FLG	129.6	93.6	8

\* Performance data obtained as per ISO 7183, Table 2, Option A2.  
Pressure dew point at 100 psig inlet air pressure, 100°F inlet air temperature, 100°F ambient air temperature.

\*\* Pressure drop ±.5 psi. Pressure drops noted are for the 38°F PDP flows.

\*\*\* Average kilowatts per hour of dryer operation at full rated capacity.

460/3/60; 380/3/50; 575/3/60 voltages available for 3,250 - 19,200 scfm models.

220 psig maximum working pressure for 3,250 - 19,200 scfm models.

Dimensions subject to change without notice.

Shipping weights shown for Multi-Module Series™ are for air cooled models. Water cooled model weight is less.

**NC Series™ and Multi-Module™ Series**  
NON-CYCLING REFRIGERATED COMPRESSED AIR DRYERS



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