

NC™ and Multi-Module™ Series

REFRIGERATED COMPRESSED AIR DRYERS

75–19,200 scfm Capacity Models



**STAINLESS STEEL
HEAT EXCHANGERS**



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. NC Series™ dryers remove water and contaminants to provide compressed air that is safe to use.

Efficient Operation

A refrigeration system and heat exchanger are used to cool compressed air as it passes through an NC Series dryer. Cooling causes moisture and contaminants to condense so they can be removed from the air stream in a high efficiency separator and then be automatically discharged through a drain for disposal. Compressed air is then warmed as it leaves the dryer to eliminate pipe sweating and to maintain air system efficiency. Dryer components are sized and matched to enable consistent dew point at full or partial moisture loading and in all ambient conditions.



NC Series™ model 400NCG shown in standard configuration.

The Standard of Excellence For Heat Exchanger Design

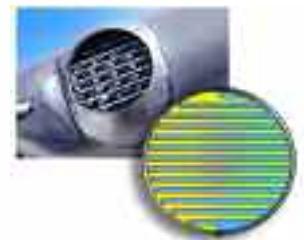
ZEKS patented CFX® stainless steel heat exchangers have been engineered exclusively for compressed air drying to include a high heat transfer coefficient and industry-leading low pressure drop.



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

CFX® = Benefits

- **100% Stainless Steel Construction**
- **Less Prone To Fouling Than Copper Or Aluminum Exchangers**
- **Flow Area That Is 3–5 Times That Of Competitive Exchangers**
- **Industry-Leading Low Pressure Drop**
- **Higher Energy Efficiency Than That Of Competitive Exchangers**
- **ZEKS Exclusive 10-Year Warranty**



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

Digital Performance Control

ZEKS' Digital Performance Controller which is standard on 500-19,200 scfm models is available as an option for 75-400 scfm models. It combines PLC technology with an integrated HMI (human machine interface) that provides enhanced monitoring capabilities. A LCD display with 16 illuminated characters and a keypad enable convenient monitoring of these dryer functions:



Digital Display of:	Dryer Model			
	75-400	500-800	1000-2400	3200-19200
• Chiller Temp.	0	S	S	S
• Refrigerant Suction Pres.	S (Gauge)	S (Gauge)	S	S
• Refrigerant Suction Temp.	NA	0	S	S
• Refrigerant Discharge Pres.	NA	S	S	S
• Refrig. Comp. Running Time	0	S	S	S
• Dryer Running Time	0	S	S	S
• Diagnostic Memory	0	S	S	S
• Air Pres. and Temp.	NA	0	0	S
Drain Time Adjustment	0	S	S	S
Automatic Dryer RESTART	0	S	S	S
Remote Dryer START/STOP	0	S	S	S
Remote Communication-Ready	0	S	S	S
Condensate Level Alarm-Ready	0	S	S	S
Refrig. Comp. Heater Delay	NA	NA	S	S

S – Standard Feature 0 – Optional Feature NA – Not Applicable

Low Pressure Drop

The CFX® design allows ZEKS to provide air treatment with a very low pressure drop. This minimizes the overall compressed air energy requirement and the need for greater air compressor capacity.

Reliable Refrigeration System

High quality fully hermetic compressors are sized to handle maximum moisture loading. Condensers maintain efficiency in all environments and are positioned to avoid accumulation of dust and debris. An adjustable hot-gas bypass facilitates long, trouble-free service life. Refrigeration lines include valves for convenient maintenance.

Precooler/Reheater

CFX® stainless steel precooler/reheater enhances the efficiency of the dryer and reduces pipe sweating.

Durable Construction

Internal structural pieces are heavy gauge galvanized steel. Full cabinet is powder-coated with removeable panels for convenient access to all internal components.

Exclusive Warranty Coverage

In addition to the standard dryer warranty, compressors are warranted for five years. CFX® heat exchangers are covered for 10 years – a testament to their reliability.

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

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**
 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.
- **Digital 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** (3,200-19,200)
 Internally mounted condenser in each module makes use of available cooling supply.
- **Multiple Electric Disconnects** (3,200-19,200)
 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.
- **R22 & R404 Refrigerants** (model dependant)
 Meet all current regulations and performance standards.
- **Air Circuit Pre-cooler/Reheater**
 Conditions air optimally for compressed air system.
- **Exclusive Warranty**
 In addition to the standard dryer warranty, the refrigeration compressor is warranted for five years and the CFX® heat exchangers for ten years.

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.
- **Semi-Hermetic Refrigeration Compressor** (3,200-19,200)
 Fully serviceable compressor includes oil failure protection and vibration eliminators.
- **Water Cooled Refrigeration Condenser** (200-2,400)
 Water cooled condenser makes use of available cooling supply.
- **Air Cooled Refrigeration Condensers** (3,200-19,200)
 Condensers maintain individual module efficiency in all ambient conditions.
- **Savair™ No Air-Loss Condensate Drain** (3,200-19,200)
 Fully adjustable with large port that resists clogging.
- **JIC Electrics** (3,200-19,200)
 Electrical enclosure, wire marking, electrical component separation, and wire raceways provided in accordance with Joint Industry Council code requirements.
- **Cold Coalescing Piping** (3,200-19,200)
 Single INLET and OUTLET flanges enable connection of a Mist Eliminator or flanged filter for removal of oil aerosols at the coldest temperature.
- **Removable Head Condensers** (3,200-19,200)
 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.

NC™ and Multi-Module™ Series 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 CAGI rating conditions (selection example provided):

Dryer Selection Example		Inlet Air Temperature	Correction Factor	Inlet Air Pressure	Correction Factor	Ambient Air Temperature	Correction Factor
Air Volume Requirement:	375 scfm	80°F	.61	50 psig	1.29	80°F	.80
Inlet Air Temperature:	110°F	90°F	.79	75 psig	1.10	90°F	.89
Inlet Air Pressure:	150 psig	100°F	1.00	100 psig	1.00	100°F	1.00
Ambient Air Temperature:	90°F	110°F	1.23	150 psig	0.86	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 Specifications Charts* on back page.

Multi-Module Series™

Refrigerated Compressed Air Dryers

3,200-19,200 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:

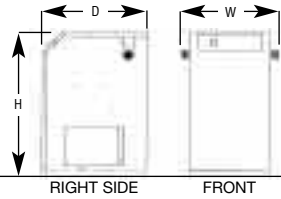
Redundancy – Eliminate the need for multiple air dryers. Multiple air treatment modules make up each Multi-Module™ large volume dryer. Two, or more, air treatment modules are integrated to form eleven dryer models with air treatment capacities from 3,200 - 19,200 scfm. Modules share a single INLET header and a single OUTLET header, each with dual connection capability, for installation versatility. Coordinated dryer operation is digitally controlled and can be adjusted to suit application requirements. 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 4,000 scfm and larger. This feature, along with the modular design, allows you 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.



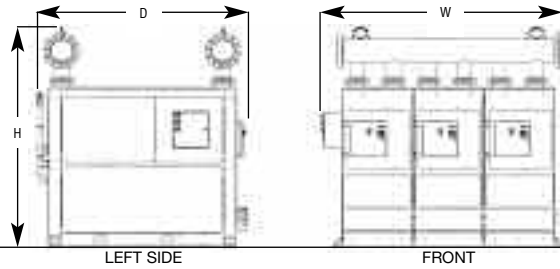
***Multi-Module Series™ model 4000 NCFM
shown configured with water cooled refrigeration condensers.***

NC Series™
Technical Specifications



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

MODEL	CAPACITY* SCFM		PRESSURE DROP** PSI	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	255	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	255	NA	1" MPT	1/4"	.5	NA	1.03	NA	R404	300 psig	
125NCG	125	172	2.0	14	21	31	270	NA	1 1/2" MPT	1/4"	.6	NA	1.27	NA	R404	300 psig	
150NCG	150	207	2.6	14	21	31	270	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	1	1.7	1.34	R404	300 psig	
250NCG	250	345	2.0	23	31	40	430	380	1 1/2" MPT	1/4"	1	1	1.6	1.25	R404	300 psig	208/230-3-60 220-3-50 460-3-60 380-3-50 575-3-60
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	3	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	4	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	5	6.2	4.67	R22	220 psig	
1200NCF	1,200	1,656	3.1	32	72	69	1,710	1,630	4" FLG	1/4"	6	5	7.58	4.67	R22	220 psig	
1600NCF	1,600	2,208	3.3	32	72	69	1,870	1,790	4" FLG	1/4"	8	6.5	9.87	6.67	R22	220 psig	
2000NCF	2,000	2,760	3.5	32	91	90.68	2,770	2,690	6" FLG	1/4"	10.5	8	12.9	7.72	R22	220 psig	
2400NCF	2,400	3,312	4.8	32	91	90.68	2,800	2,720	6" FLG	1/4"	10.5	10.5	12.9	10.10	R22	220 psig	



Overall dimensions indicated.
Air INLET and OUTLET header centerline remains consistent throughout the Multi-Module Series™ model range (except 3200NCFM).
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* SCFM		PRESSURE DROP** PSI	OVERALL DIMENSIONS			SHIP WEIGHT LBS.	CONNECT SIZE IN/OUT	DRAIN (QTY) SIZE FPT	REFRIG COMP		H ₂ O FLOW GPM @85°F	H ₂ 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	
3200NCFM	3,200	3.3	68	98	90	4,000	6" FLG	(2) 1/2"	(2) 8	(2) 6.5	28	1.5 NPT	19.8	13.4	2	
4000NCFM	4,000	3.5	80	99	98	5,000	8" FLG	(2) 1/2"	(2) 10.5	(2) 8	36	1.5 NPT	25.8	15.5	2	
4800NCFM	4,800	4.8	80	99	98	5,500	8" FLG	(2) 1/2"	(2) 10.5	(2) 10.5	54	1.5 NPT	25.8	20.2	2	
6000NCFM	6,000	2.6	112	100	100	7,500	10" FLG	(3) 1/2"	(3) 10.5	(3) 8	56	2.0 NPT	38.7	23.2	3	
7200NCFM	7,200	4.8	112	100	100	8,000	10" FLG	(3) 1/2"	(3) 10.5	(3) 10.5	76	2.0 NPT	38.7	30.3	3	
8000NCFM	8,000	3.5	148	100	102	9,000	12" FLG	(4) 1/2"	(4) 10.5	(4) 8	78	2.5 NPT	51.6	30.9	4	
9600NCFM	9,600	4.8	148	100	102	10,000	12" FLG	(4) 1/2"	(4) 10.5	(4) 10.5	108	2.5 NPT	51.6	40.4	4	
12000NCFM	12,000	4.3	184	104	106	14,000	14" FLG	(5) 1/2"	(5) 10.5	(5) 10.5	135	3.0 FLG	64.5	50.5	5	
14400NCFM	14,400	4.3	209	104	106	17,000	14" FLG	(6) 1/2"	(6) 10.5	(6) 10.5	162	3.0 FLG	77.4	60.6	6	
16800NCFM	16,800	4.8	242	104	106	21,000	16" FLG	(7) 1/2"	(7) 10.5	(7) 10.5	189	4.0 FLG	90.3	70.8	7	
19200NCFM	19,200	4.8	275	104	106	25,000	16" FLG	(8) 1/2"	(8) 10.5	(8) 10.5	216	4.0 FLG	103.2	80.9	8	

* Performance data obtained and presented in accordance with CAGI Standard No. ADF 100, "Refrigerated Compressed Air Dryers – Methods for Testing and Rating." Pressure dew point at 100 psig, 100°F inlet air, 100°F ambient air.
** 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 3,200 - 19,200 scfm models.

220 psig maximum working pressure for 3,200 - 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.
R22 refrigerant used in 3,200 - 19,200 scfm models

NC™ and Multi-Module™ Series
Refrigerated Compressed Air Dryers



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