



DIRECT EXPANSION REFRIGERATED AIR DRYER





www.airdit.com



ABOUT DIT

DIT, Franco-Thai manufacturer with more than two decades of experience as an air treatment specialist, leverages its expertise to develop and design products tailored for industrial use in the compressed air field. DIT is constantly focused on achieving optimal performance and possesses several patents, ensuring a leading position in terms of innovation and an ongoing commitment to excellence in performance.

Emboldened by this expertise and in partnership with industry-leading component suppliers renowned for their cost-effective solutions, DIT provides you with a comprehensive selection of the most efficient products available on the market. Our technical office and commercial team possess the expertise to assist you worldwide with both standard projects and tailor-made solutions. Through valuable suggestions and in response to your preferences, our team excels at identifying the most fitting solutions to meet your specific requirements, enabling you to respond adeptly and globally to address various challenges with precision and expertise.

At DIT, our foremost mission revolves around ensuring client satisfaction. We take great pride in crafting and tailoring solutions that are uniquely designed to meet YOUR specific needs and requirements.

Our DXA line of direct expansion refrigerated air dryers is a valuable addition to our comprehensive range of compressed air treatment solutions. This line complements a wide array of products, including:

- Refrigeration dryers
- Adsorption dryers
- Compressed air treatment unit
- Filtration
- Drains
- Oil/Water separators
- After coolers

Together, these offerings provide a comprehensive suite of compressed air solutions to meet your unique client request with respect of all international standards dedicated to compressed air systems.



OPERATING PRINCIPLE

Introduction to DXA Dryers and Refrigeration Principle

Our DXA dryers work by using a process called direct expansion refrigeration to effectively dry compressed air that comes from the network. With an efficient refrigeration system and our patented 3-in-1 heat exchanger, we achieve optimal drying by efficiently exchanging heat across the entire surface.

Description of Heat Exchanger

Our heat exchanger, made of aluminium, has three sections. The first section is an air/air exchanger, which cools down the moist, water-saturated air before it enters. The second section is an air/refrigerant fluid exchanger, which further cools the compressed air to a temperature between +7°C and +10°C, The third section is the removal of the moisture from the compressed air through a built-in separator. This patented heat exchanger, created in collaboration with the one of the largest heat exchanger manufacturer, ensures efficient cooling in various air conditions and ambient temperatures. It also minimizes resistance to the flow of compressed air, resulting in low pressure drop.

Initial Cooling for Efficiency

At the beginning of the process, the hot and moisture-laden compressed air undergoes preliminary cooling within the air/air heat exchanger. This reduces the cooling requirement in the air/refrigerant gas zone, increasing energy efficiency by more than 45%.

Condensate Separation and Removal

The moisture droplets separated within the separator are collected and gravity-fed to the condensate drain. The resulting condensate can be efficiently purged using a fully adjustable high-performance sequential drain or, for greater energy savings, a level-detection drain (available as an option starting from the DXA 0040 model).

Continuous Supply of Dry Air

After being dried and cooled in the air/refrigerant gas exchanger, the compressed air is reheated in the air/air exchanger before it continues through the compressed air network. This ensures a steady and uninterrupted supply of dry air for your processes.



EVAPORATOR 3 IN 1 HEAT EXCHANGER



Composed of Aluminum allows great energy savings thanks to its economizer pre-exchanger, low pressure drop and high-performance separator. Aluminum has excellent heat transfer properties, allowing for efficient cooling and condensation of moisture from compressed air.

High performance design through its 3-in-1 exchanger that ensures extremely limited pressure drop of 0.25 bar (3 psi) at the nominal flow rate expressed.

Our refrigerated air dryers outperform other machines on the market, thanks to its large surface air/refrigerant heat exchanger offering to the system a lower condensing temperature and wide range of applications

By enhancing heat transfer efficiency and boosting cooling capacity, the blue-fin technology not only improves performance but also extends the durability and lifespan of our systems

DIT's large surface area heat exchanger contributes to higher performance on our refridgerated air dryers when compaired to other machines on the market.

Our anti-corrosive blue fins protect the condenser coils from different types of corrosion caused due to moisture, humidity, harsh weather conditions.

While improving the heat transfer process and increasing the cooling capacity, the blue-fin technology enhances the durability and longevity of DIT's Air Dryers.

POWERFUL BLUE FIN AIR CONDENSER



PRODUCT FEATURES





3-in-1 Heat exchanger

This aluminium heat exchanger offers significant energy savings through its economizer pre-exchanger, minimal pressure drops, and high-performance separator. Moreover, the aluminium used for its construction protects the heat exchanger against the moisture-related corrosion, ensuring exceptional longevity in the market.

Compressors

These hermetic refrigeration compressors (including pistons, rotary, and scroll types) efficiently generate cold air to maintain the dew point under all conditions and usage scenarios.

Controller

For models from DXA 0040 to 2850, the controller ensures optimal dryer control, providing a dew point display, managing condensate purge. These functions are not available in models without controller: (SAN)

Ambient temperature working condictions

Its robust design enables operation within a wide range of ambient temperatures, up to 50°C and allows for compressed air intake up to 65° C.

Cost Efficient Energy Usage

Our 3-in-1 heat exchanger design ensures exceptional performance with an extremely minimal pressure drop of just 0.25 bar at the specified flow rate.

Easy Setup and Operation

Our direct expansion refrigeration dryer is a plug-and-play product, with all components seamlessly integrated for straightforward use. DXA dryers come equipped with a power cable, allowing for hassle-free commissioning without the need to access the dryer's internals.

Durability and Sturdiness

The dryer's robust body, coated with baked epoxy paint, guarantees long-term durability, even in harsh and dusty environments. Its high-efficiency condenser, featuring durable fins, ensures easy cleaning and exceptional longevity.

Streamlined Maintenance

Maintenance is simplified with easy access via a single panel, facilitating optimal and quick dryer device maintenance. The DXA dryers are designed for direct access to all components, and technical diagnostics are made easier with pressure taps within the refrigeration circuit.



TECHNICAL SPECIFICATIONS

		Rated flow		Power supply	Dim	nensions(m	m)	Weight		
Part model	m3/h	m3/min	cfm	V/Ph/Hz	W	L	Н	kgs		
DXA-0040 SAN	40	0.7	24	230/1/50	362	511	760	50		
DXA-0075 SAN	75	1.3	44	230/1/50	362	511	760	55		
DXA-0120 SAN	120	2.0	71	230/1/50	362	511	760	75		
DXA-0200 SAN	200	3.3	118	230/1/50	362	511	760	105		
DXA-0040 SA	40	0.7	24	230/1/50	362	511	760	110		
DXA-0075 SA	75	1.3	44	230/1/50	362	511	760	120		
DXA-0120 SA	120	2.0	71	230/1/50	362	511	760	130		
DXA-0200 SA	200	3.3	118	230/1/50	362	511	760	150		
DXA-0285 SA	285	4.8	168	230/1/50	445	610	880	160		
DXA-0375 SA	375	6.3	221	230/1/50	445	730	940	220		
DXA-0500 SA	500	8.3	294	230/1/50	445	730	940	240		
DXA-0650 SA	650	10.8	383	230/1/50	515	905	1050	320		
DXA-0825 SA	825	13.8	486	230/1/50	515	905	1050	340		
DXA-1000 SA	1000	16.7	589	230/1/50	515	905	1050	440		
DXA-1300 SA	1300	21.7	765	230/1/50	652	905	1050	470		
DXA-1500 SA	1500	25.0	883	400/3/50	652	905	1050	620		
DXA-1900 SA	1900	31.7	1118	400/3/50	703	1185	1140	700		
DXA-2400 SA	2400	40.0	1412	400/3/50	703	1185	1140	800		
DXA-2850 SA	2850	47.5	1677	400/3/50	853	1320	1540	880		

Specifications

Unit operating limits	Ambient temperatures from +5°C to +50°C - pressure from 4 bar to 13 bar
Design conditions	Ambient temperatures +32°C, inlet air temperatures +40°C, pressure dew point +7°C / +10°C, pressure 7 bar(g)
Refrigerant type	R134 on all models

The advertised product weights are net without packaging and expressed in kilograms.

The maximum operating pressure is 13 bar

The maximum compressed air inlet temperature is 65°C

The correction factors details are available from our sales and technical teams, or are specified within our selection software, below is an extract of main values

Dryer maximum airflow = Dryer airflow x K1 x K2 x K3 x K4

	Correction Factor												
V 1	Working pressure	(barg)	3	4	5	6	7	8	9	10	11	12	13
NI	Correction factor	(K1)	0.57	0.72	0.82	0.92	1	1.06	1.08	1.11	1.14	1.18	1.19
82	Ambient temperature	(°C)	25	28	30	32	35	38	40	42	45	48	50
KZ	Correction factor	(K2)	1.14	1.1	1.06	1	0.94	0.91	0.88	0.86	0.82	0.78	0.75
22	Air inlet temperature	(°C)	30	35	40	45	50	55	60	65	-	-	-
NJ	Correction factor	(K3)	1.48	1.18	1	0.85	0.7	0.61	0.56	0.49	-	-	-
K4	Dew point	(°C)	4	5	6	7	8	9	10	-	-	-	-
	Correction factor	(K4)	0.65	0.8	0.84	0.88	0.92	0.96	1	-	-	-	-

SUSTAINABLE AIR & WATER SOLUTIONS FOR INDUSTRIAL APPLICATIONS



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