ECO**TROC®** KTA-S
Compressed Air Refrigeration Dryer

Safe, reliable and efficient

Rev 02_0526 NA

Compact and powerful: ECOTROC® KTA-S

The new **ECOTROC® KTA-S** refrigeration dryer series convinces with its extremely compact design, high performance and reliability. Compressed air treatment is made even more efficient and safe by our new integrated control system. The use of high-quality components and a copper tupe heat exchanger ensures an economic efficiency and durability.

Brand components:

- Refrigerant compressor: Danfoss / Copeland / Tecumseh
- Fan motor: Elco (Regal Rexnord) / Ziehl-Abbegg
- Control: Coel (Ascon Tecnologic)

ECOTROC® KTA-S PLUS-EFFECTS

+ simple and efficient installation
+ time-controlled condensate drain included, zero-loss drain upgrade as an option
+ micro-controller monitors the most important components as well as the quality of the compressed air
+ copper heat exchanger ==› higher heat exchange rate compared to steel or aluminum

The service advantages:

+ big service hatch ensures easy access to the interior of the **ECOTROC® KTA-S**
+ clear arrangement of components allows easy repair and maintenance work

ECO**TROC**® KTA-S

Compressed Air Refrigeration Dryer

Safe and energy-efficient compressed air treatment

Due to physical principles, water is present in every compressed air system. However, water can cause damage in the form of corrosion, functional problems and even loss of production in pneumatic controls and systems. Therefore, it is essential to separate water from compressed air systems. Warm air can carry more moisture than cold air, which is the physical principle used in **ECOTROC® KTA-S** refrigeration dryers to remove water.

KSI refrigeration dryers reliably provide dry compressed air at minimal operating costs. This protects expensive plants, machines and equipment worldwide and effectively increases operational reliability.

Operating principle

The **ECOTROC® KTA-S** refrigeration dryer works on the physical principle that warm air can absorb more moisture than cold air. Warm air entering the refrigeration dryer contains a varying amount of moisture, depending on previous treatment and other influences. To remove this moisture, the temperature of the air is lowered to the desired dew point, at which point all excess moisture condensates and is discharged. Dry compressed air is now released to the downstream compressed air system.

Incoming air is first pre-cooled in an air-to-air heat exchanger before entering the air-to-refrigerant heat exchanger. Here, most of the heat from the compressed air is extracted. Condensate is ejected from the air flow by a cyclone separator at the bottom of the heat exchanger and discharged by a standard time-controlled condensate drain or an optional zero-loss drain. In order to maintain the process, a complex refrigerant circuit is integrated in the the **ECOTROC® KTA-S** refrigeration dryer.

The refrigerant is fed as a liquid into the air-to-refrigerant heat exchanger. There it partially evaporates due to the heat input from the incoming warm air. The resulting gas is compressed and afterwards liquefied again by an air-cooled condenser. A tank stores the excess refrigerant and balances the system.

Various temperature sensors are installed in the refrigerant circuit to increase operational reliability.

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Control unit

Automatic operation control and monitoring

The microprocessor control of the **ECOTROC® KTA-S** refrigerant dryer fully automatically controls the operation. In addition, it provides information on the current status of the process and, in the event of problems or errors, allows easy troubleshooting.

- simple display of pressure dew point and ambient temperature
- alarm output for maximum and minimum pressure dew point thresholds
- optional temperature sensor for inlet air
- controls solenoid drain valve: frequency and draining time, test button
- values in °F or °C
- safety shutdown in case of freezing, with auto restart once conditions stabilize

We recommend pre- and post-filtration!

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Compressed Air Refrigeration Dryer

Fully-automatic unit for compressed air treatment (air cooled)

including:

- time-controlled condensate drain

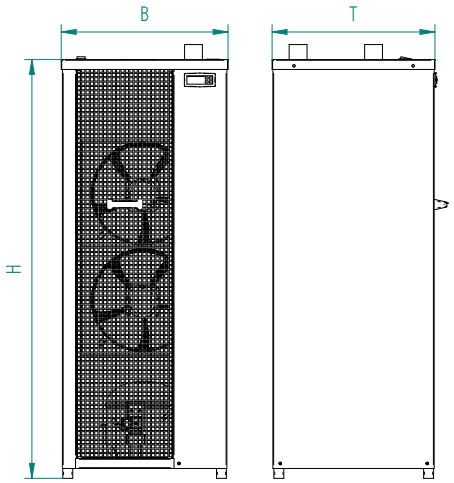
option:

- electronic, zero-loss condensate drain **KONDRAIN®** N350

Capacity Volume Flow: up to 1890 cfm*

Pressure dew point: + 37.4 °F

* based on 14.5 psi (abs.) at 102 psi g operating pressure



Models

Type	Capacity	Dimensions (inch)			Connection	Weight
	cfm	H	B	T		lb
KTA-S14	14	29.35	16.55	14.66	1/4" NPT	77
KTA-S35	35	29.35	16.55	14.66	3/4" NPT	86
KTA-S47	47	29.35	16.55	14.66	3/4" NPT	86
KTA-S85	85	37.23	16.55	14.66	1" NPT	90
KTA-S118	118	48.27	19.38	25.81	1 1/2“ NPT	128
KTA-S176	176	48.27	19.38	25.81	1 1/2" NPT	187
KTA-S235	235	56.54	19.38	25.81	1 1/2" NPT	209
KTA-S306	306	56.54	19.38	25.81	2" NPT	227
KTA-S376	376	54.77	27.86	23.96	2" NPT	407
KTA-S470	470	54.77	27.86	23.96	2" NPT	407
KTA-S635	635	64.22	34.08	30.14	3" flange	495
KTA-S753	753	61.46	33.88	35.46	3" flange	550
KTA-S945	945	64.22	33.88	37.82	3" flange	605
KTA-S1180	1180	64.22	49.25	39.40	4" flange	638
KTA-S1420	1420	64.22	49.25	39.40	4" flange	772
KTA-S1890	1890	64.22	49.25	45.28	4" flange	904

Correction factors

Correction factors									
Inlet temperature									
°F	**< 77**	**86**	**95**	**100**	**104**	**113**	**122**	**131**	**140**
F(t)	**1.43**	**1.20**	**1**	**0.90**	**0.84**	**0.70**	**0.58**	**0.49**	**0.41**
Correction factors working pressure									
psi g	**58**	**72.5**	**87**	**101.5**	**116**	**145**	**174**	**203**	**232**
F(p)	**0.86**	**0.92**	**0.99**	**1**	**1.03**	**1.08**	**1.11**	**1.14**	**1.16**

Pressure dew-point 37.4 °F calculated to volume flow at a suction condition of 68°F and 14.5 psi (abs.)

$$C = \frac{V}{F(p) x\, F(t)}$$

C	Capacity indicated on table, for each model
V	New capacity, after correction
F(p)	Pressure correction factor
F(t)	Temperature correction factor

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Electrical Data

Type	Installed power	Operating voltage	Electrical load
	HP	V / Phases / Hz	kVA
KTA-S14	0.2	110 / 1 / 60	0.23
KTA-S35	0.35	110 / 1 / 60	0.3175
KTA-S47	0.65	110 / 1 / 60	0.6063
KTA-S85	1.1	110 / 1 / 60	0.9913
KTA-S118	1.4	110 / 1 / 60	1.335
KTA-S176	1.6	220 / 1 / 60	1.4825
KTA-S235	1.6	220 / 1 / 60	1.4825
KTA-S306	2.1	220 / 1 / 60	1.9738
KTA-S376	2.8	220 / 1 / 60	2.6488
KTA-S470	3.3	220 / 1 / 60	3.0713
KTA-S635	3.8	460 / 3 / 60	3.5725
KTA-S753	4.9	460 / 3 / 60	4.5275
KTA-S945	6.6	460 / 3 / 60	6.1675
KTA-S1180	8.3	460 / 3 / 60	7.7488
KTA-S1420	11.0	460 / 3 / 60	10.24
KTA-S1890	13.3	460 / 3 / 60	12.375

Specifications

Pressure dew point	+ 37.4 °F
Medium	Compressed air and gases
Operation pressure min.	58 psi g
Operation pressure max.	232 psi g
Ambient temperature max.	122 °F
Ambient temperature min.	39.2 °F
Inlet temperature max.	140 °F
Refrigerant	R513a
Colour	powder coated RAL 9005 / 5010