ECOKAT

Oil-Free Compressed Air to Class 0 using Catalysis

ECOKAT

EN ISO 13485:2003 DEKRA zertifiziert
Qualitätsmanagement
Wir sind zertifiziert
Regelmäßige freiwillige Überwachung nach EN ISO 13485:2003 + AC:2007

Zertifiziertes Management System
QGM
DIN EN ISO 9001:2008

KSI ECOKAT removes more from your compressed air

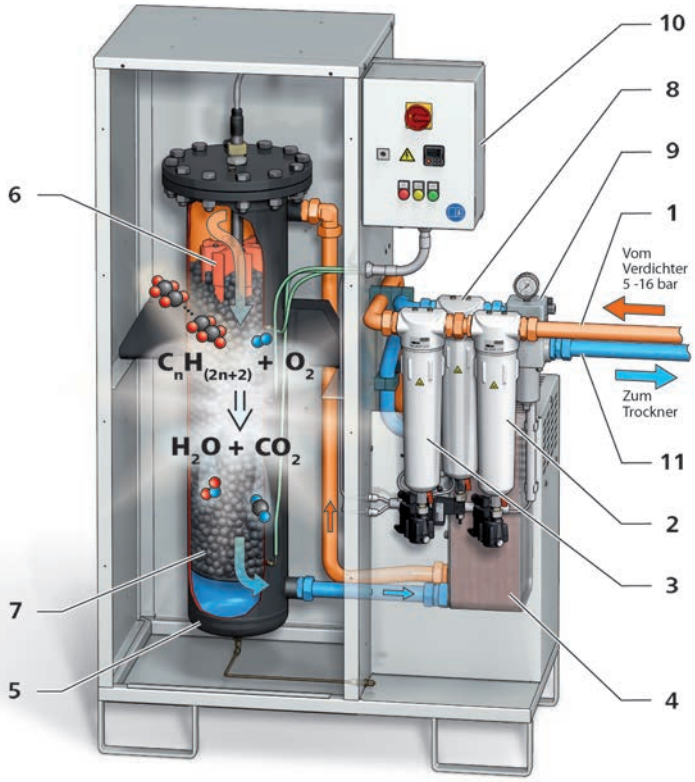
Today, based on the current state of the art, the compact and brilliant catalysis technology offers the availability of oil-free compressed air for sensitive applications. **ECOKAT** is TÜV certified. This means a continuous residual oil content ‹ 0.0025 mg/Nm³ according to class 0 of ISO 8573-1. In contrast to conventional activated carbon processes there are no saturation limits with **ECOKAT**, banishing the danger of oil breaching the compressed air network and reaching sensitive applications. What about the accumulating condensate? Due to the system design it is oil-free and can be discharged directly into the municipal sewer. **ECOKAT** offers trend-setting technology for today's compressed air treatment based on vehicle catalyst technology that has proven itself millions of times over. As a result it offers unique advantages through absolute process safety and consistently high compressed air quality compared to conventional systems. The catalyst's function is independent of temperature and moisture content of the compressed air to be treated, making it possible to provide constant minimum residual oil content. KSI guarantees class 0-level oil-free compressed air at a maximum inlet concentration of 200 mg/Nm³ prior to the converter. A KSI high-end system solution for high-end compressed air quality. **KSI ECOKAT** increases the reliability and efficiency of sensitive processes in application areas such as semi-conductor production, laser technology, food stuff production and packaging, medical technology, aerospace applications, and surface finishing.

High-End Advantages • The ECOKAT Plus-Effect +++

+ guarantees linear, oil-free compressed air based on ISO 8573-1 class 0
+ TÜV-tested quality (residual oil content ≤ 0.0025 mg/Nm³)
+ constant, permanent compressed air quality, independent of hydrocarbon content of the surrounding air
+ highest process reliability due to high-end technology, vastly superior to the classic activated carbon process
+ guaranteed operation of the catalyst for 5 years, with a hydrocarbon concentration at the inlet of the **ECOKAT** of up to 200 mg/Nm³
+ maximum energy savings due to thermal insulation, maximum 0.001 kW/m³
+ paint-compatible quality since silicone monomers are converted to silicates
+ flexible performance range from 20% to 110% of the nominal throughput
+ increased desiccant service life with downstream adsorption dryers
+ optimized flow response – about 0.4 bar at a design point of 7 bar g
+ maximum protection with safety shutdown => no oil breach possible
+ compact construction
+ 11 performance levels available for solution-oriented application
+ environmentally friendly, since there is no special waste
+ after the **ECOKAT** the condensate in the dryer is pure and neutral, with a hydrocarbon content ‹ 2mg/liter and a pH between 6 and 7; according to waste regulations it can therefore be discharged indirectly without additional treatment

ECO**KAT**

Construction



1 Oil contaminated air from the compressor
2 Pre-separator
3 Filter module
4 Heat exchanger
5 Converter housing
6 Electrical heater
7 Catalyst
8 Particle filter
9 Pressure isolation valve
10 Controller
11 Oil-free compressed air to dryer

High End Technology & Function

The conversion of oil aerosols (process-damaging hydrocarbons) into process-compatible materials via catalysis:
ECOKAT is integrated between compressor and compressed air dryer. Liquid components are removed from the oil contaminated compressed air (1) in the pre-separator (2). A high-performance filter module (3) treats the compressed air in a second stage in order to ensure the varying flow range, from 20% to 110%, maximum nominal throughput. In the subsequent heat exchanger (4) the compressed air is heated and then flows into the catalyst converter unit (5 & 7). The operating temperature that is required for the catalysis process is reached using a heating system (6). The now pure, oil-free compressed air is cooled in the counter flow in the heat exchanger (4). The quality treated compressed air (11) is now transferred to the downstream compressed air dryer via a particle filter stage (8) and the pressure isolation/safety valve (9).

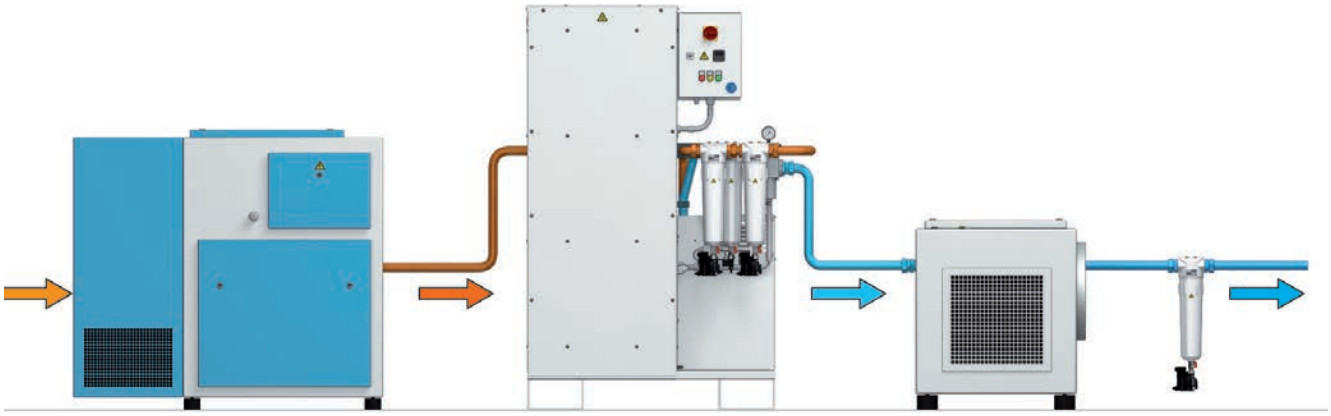
Technical data

Model	Nominal flow at 7 bar g	maximum pressure	Connection size*	Weight**	Width**	Depth**	Height**	Supply voltage	Specific power consumption during operation	Power consumption during nominal flow	Installed power capacity
	[Nm³/min]	[bar]		[kg]	[mm]	[mm]	[mm]	[V]	[kWh/Nm³]	[kWh]	[kW]
EK004	0.4	16	½“	60	700	340	1400	230	0.009	0.2	1
EK01	1	16	½“	140	860	455	1455	230	0.009	0.5	1.2
EK02	2	16	1“	160	860	455	1655	230	0.009	1.1	2.5
EK05	5	16	1 ¼“	360	1175	620	1890	400	0.007	2.1	5
EK07	7	16	1 ½“	410	1175	620	1890	400	0.006	2.5	5
EK10	10	16	1 ½“	590	1630	815	2100	400	0.005	3.0	10
EK15	15	16	2 “	770	1630	880	2100	400	0.005	4.5	10
EK20	20	16	2 ½“	900	1900	1140	2150	400	0.005	6.0	15
EK30	30	16	2 ½“	1100	1900	1140	2150	400	0.005	9.0	21
EK40	40	16	DN 100	1500	2200	900	2240	400	0.005	12.0	28
EK50	50	16	DN 100	1700	2250	900	2240	400	0.005	15.0	28

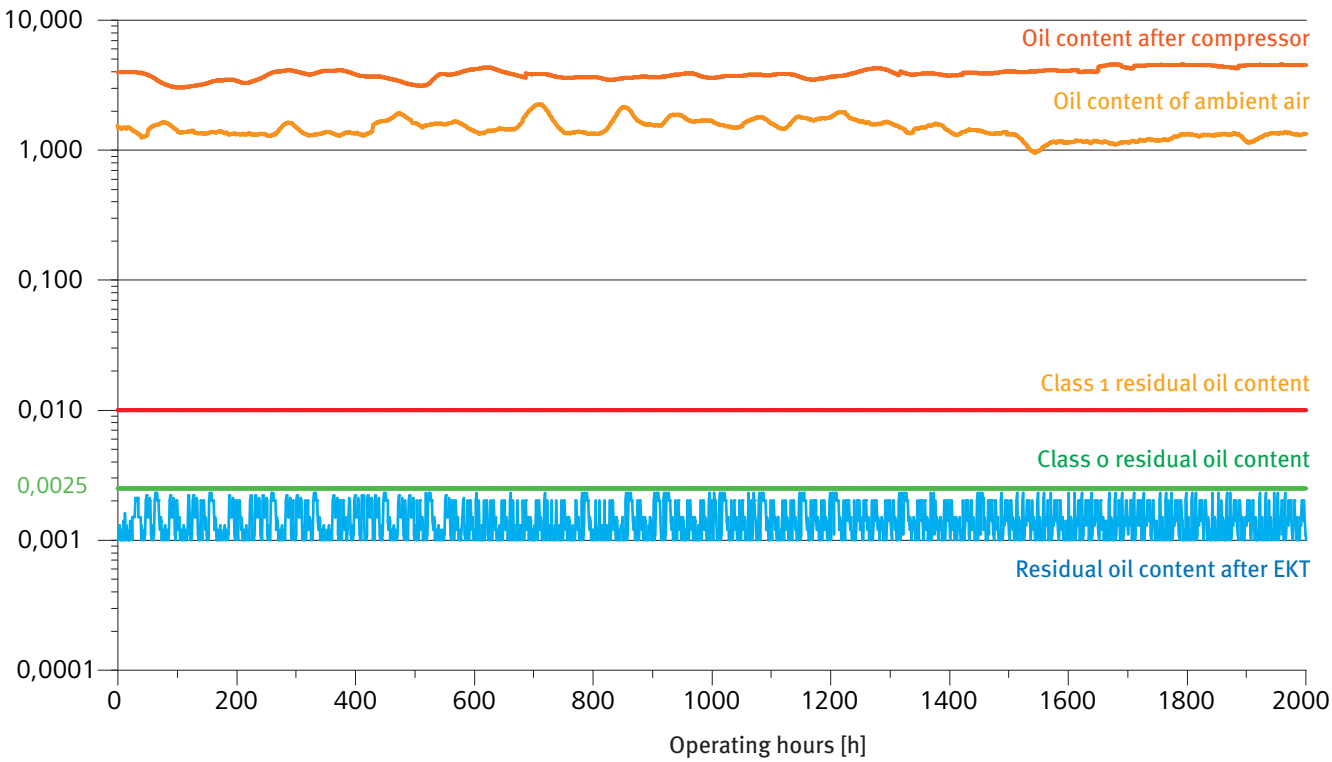
* Connection is option-dependent (see installation drawing)
** Weight and dimensions without separator, filter module and particle filter

Oil-free Class 0 Compressed Air and pure Condesate

Measurement of the Hydrocarbon concentration in Air and Compressed Air



Compressor | **ECOKAT** | Dryer | 0.01 micron particle filter



The hydrocarbon concentration was measured over a time period of 2,000 hours

- in the ambient air,
- after an oil-injected screw compressor,
- after an EK05

according to ISO 8573-2, -5 and -6.

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