ROTORCOMP®
AIR TREATMENT

INNOVATION QUALITY RELIABILITY WORLDWIDE

ETC®-SV

Class 0 oil-free compressed air through catalysis

››› The way to oil-free compressed air

The ETC® operating principle

Through the process of catalytic oxidation, ETC® converters actively transform the oil and hydrocarbons in compressed air into water and CO_2. ETC® Converter continuously supply Class 0 compressed air, in accordance with ISO 8573-1, with a residual oil content of < 0.0025 mg/Nm³ as well as an oil-free condensate.

With its catalytic technology for the treatment of compressed air, ETC® provides a technical solution that has been successfully used for many years in the automotive and chemical industries.

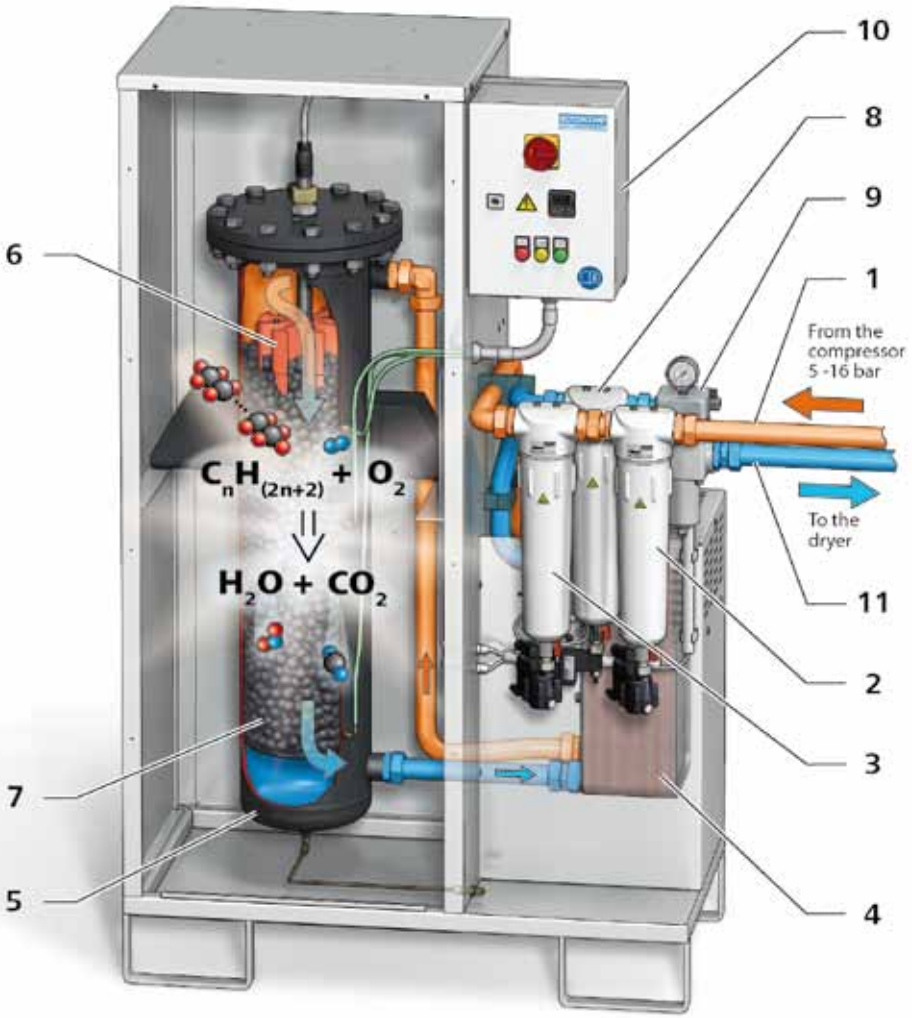
For compressed air upstream of a converter that has an oil content of max. 200 mg/Nm³, ROTORCOMP® guarantees oil-free Class 0 compressed air downstream of the converter.

In contrast to conventional filter systems (e.g., activated carbon), the air quality is constantly maintained. Saturation and the risk of breakthrough by hydrocarbon compounds are reliably prevented.

In contrast to oil-free compressors, the compressed air quality does not depend upon the hydrocarbon content of the ambient air.

The operation of the catalytic converter is independent of the temperature and humidity of the compressed air to be treated.

ETC®-SV layout



1 Compressed air containing oil from compressor
2 Pre-separator (VS)
3 VS module (optional)
4 Heat exchanger
5 Converter vessel
6 Electric heater
7 Catalyst
8 Particle filter (optional)
9 Minimum pressure closing valve (DHSV)
10 Controls
11 Oil-free compressed air to dryer

ETC®-SV – Catalytic air treatment

Features and product advantages

- Guaranteed oil-free compressed air in accordance with ISO 8573-1 Class 0 (residual oil content ≤ 0.0025 mg/Nm³), confirmed by independent TÜV measurements
- Absolutely secure system since a protective shutdown unit prevents oil-containing compressed air from entering into the network in the event of a malfunction
- Guarantee on the operation of the catalyst for 5 years for hydrocarbon concentrations at the ETC® inlet of up 200 mg/Nm³
- Lower energy consumption to a max. of 0.01 kWh/m³ through Improved insulation of converter and housing
- Minimizes significant the bacteria, fungus and microbial diversity content in the compressed air
- Pure and neutral condensate (Öl < 2mg/l; pH-Wert: 6 – 7) after ETC
- Irreversible separation of silicon monomeres out of the compressed air
- Partial load capacity of 20 to 110 % of the nominal flow rate when using the optional VS module
- Increased service life for downstream dryer

The ETC® is integrated into the compressed air network downstream of the compressor. The compressed air (**1**) containing oil that is flowing from the compressor is conducted over a pre-separation unit (**2**) and a VS module (**3**) into a plate heat exchanger (**4**). The pre-separation unit protects the ETC® against liquid oil and water. The optional VS module extends the max. working range by 20 to 110 % of the nominal flow. The compressed air is pre-heated in the plate heat exchanger and subsequently flows into the converter vessel (**5**) containing the catalyst (**7**). By using an electric heater (**6**), the catalyst is held at a temperature that is necessary for the catalytic reactions to take place. The oil-free compressed air leaves the converter and is cooled down again in a counter flow in the plate heat exchanger and is conducted through an optional particle filtration unit (**8**) and the minimum pressure closing valve (**9**) to a dryer.

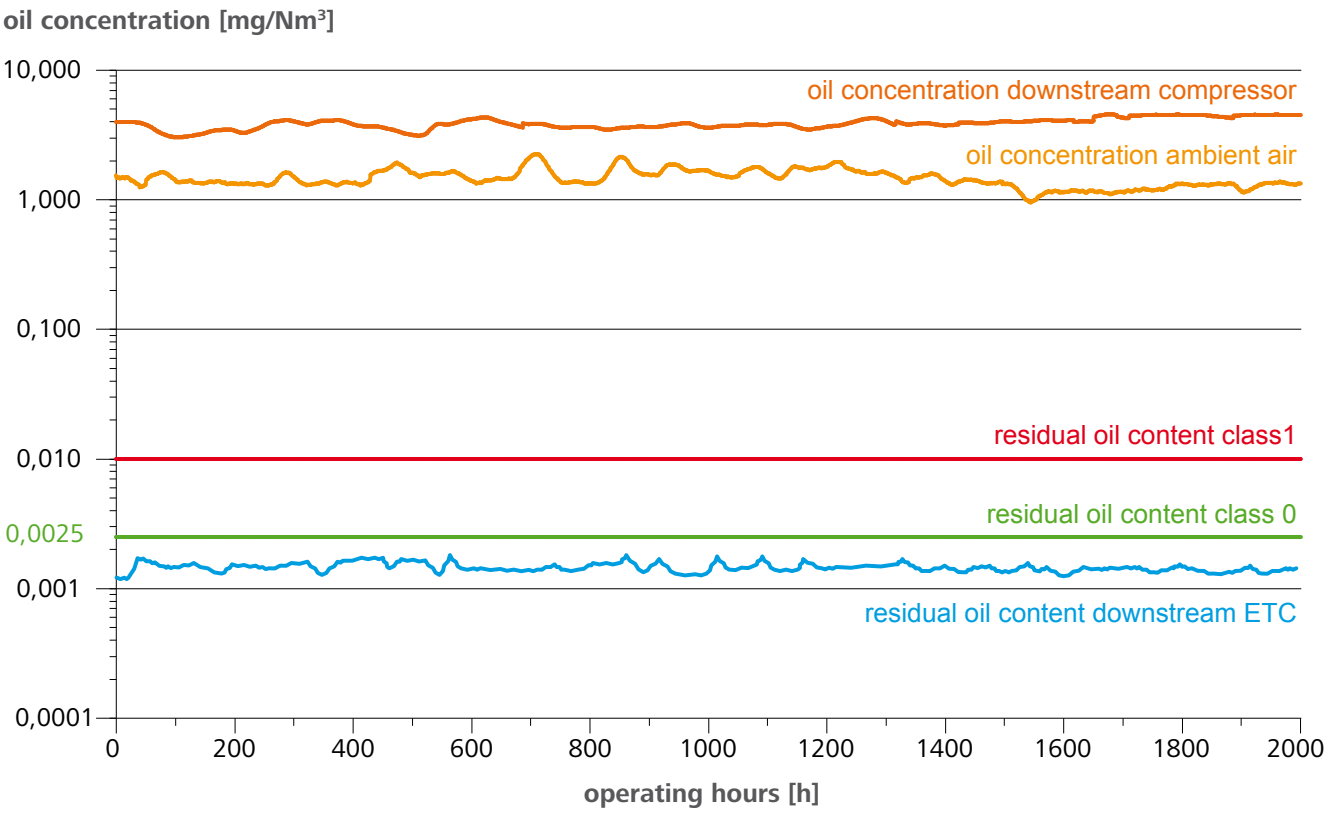
ETC®-SV

Class 0 oil-free compressed air and clean condensate

Oilfree compressed air station

Compressor *ETC®* *Dryer* *Filter 0.01 µm*

Hydrocarbon concentration measurements in air and compressed air

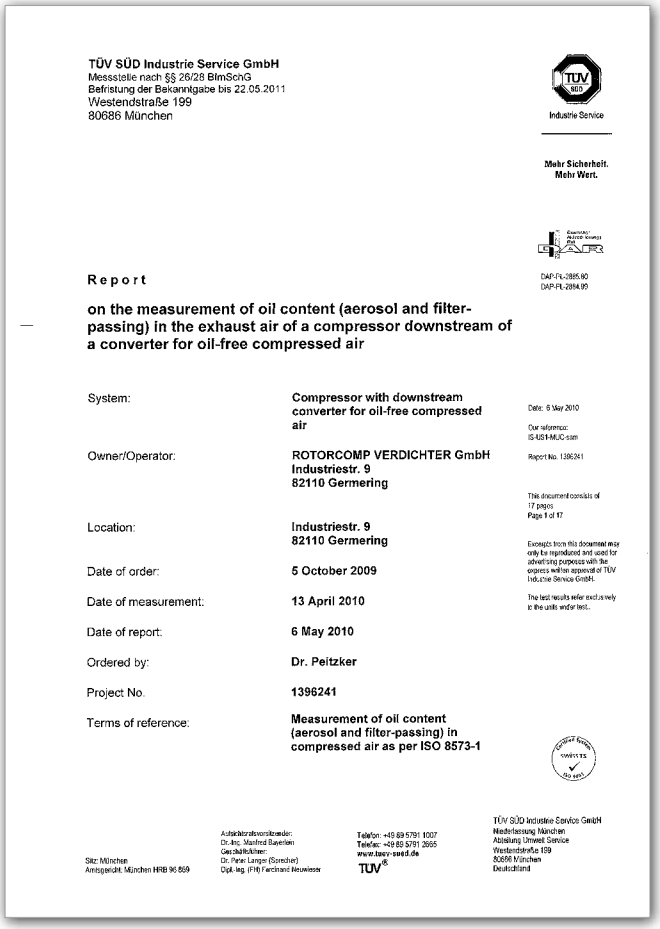


Over a period of 2,000 hours, hydrocarbon concentrations

- in the ambient air
- downstream of an oil-injected screw compressor
- after an ETC-SV5

were measured in accordance with ISO 8573-2, -5 and -6. For this a ROTORCOMP® on-line-measurment instrument type RCS NMHC was used, which is based on the measuring of NMHC (non-methane hydrocarbons) – values.

TÜV test report: oil content measurements



TÜV SÜD Industrie Service GmbH
Messstelle nach §§ 26/28 BImSchG
Befristung der Bekanntgabe bis 22.05.2011
Westendstraße 199
80686 München

Industrie Service

Mehr Sicherheit. Mehr Wert.

DAP-PL-2885.00
DAP-PL-2884.00

Report

on the measurement of oil content (aerosol and filter-passing) in the exhaust air of a compressor downstream of a converter for oil-free compressed air

System:	**Compressor with downstream converter for oil-free compressed air**
Owner/Operator:	**ROTORCOMP VERDICHTER GmbH Industriestr. 9 82110 Germering**
Location:	**Industriestr. 9 82110 Germering**
Date of order:	**5 October 2009**
Date of measurement:	**13 April 2010**
Date of report:	**6 May 2010**
Ordered by:	**Dr. Peitzker**
Project No.	**1396241**
Terms of reference:	**Measurement of oil content (aerosol and filter-passing) in compressed air as per ISO 8573-1**

Date: 6 May 2010
Our reference: IS-UI/I-MUC-sam
Report No. 1396241

This document consists of 17 pages
Page 1 of 17

Excerpts from this document may only be reproduced and used for advertising purposes with the express written approval of TÜV Industrie Service GmbH.

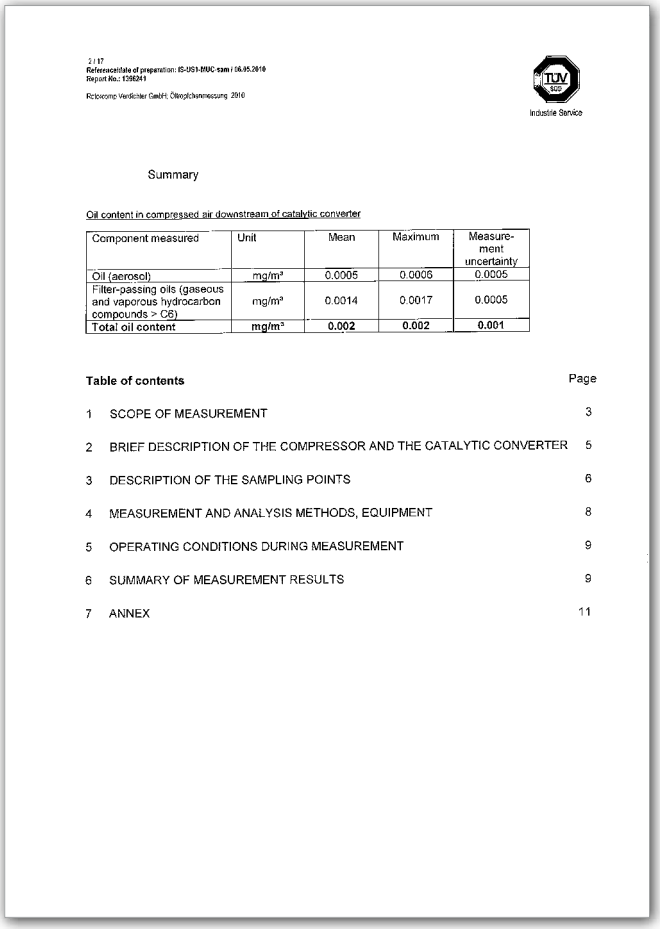
The test results refer exclusively to the units under test.

Sitz: München
Amtsgericht: München HRB 96 869

Aufsichtsratsvorsitzender:
Dr.-Ing. Manfred Bayerlein
Geschäftsführer:
Dr. Peter Langer (Sprecher)
Dipl.-Ing. (FH) Ferdinand Neuwieser

Telefon: +49 89 5791 1007
Telefax: +49 89 5791 2665
www.tuev-sued.de

TÜV SÜD Industrie Service GmbH
Niederlassung München
Abteilung Umwelt Service
Westendstraße 199
80686 München
Deutschland



2 / 17
Referenceblatt of preparation: IS-UI/I-MUC-sam / 06.05.2010
Report No.: 1396241

Rotorcomp Verdichter GmbH, Ölaerosolmessung 2010

Industrie Service

Summary

Oil content in compressed air downstream of catalytic converter

Component measured	Unit	Mean	Maximum	Measure-ment uncertainty
Oil (aerosol)	mg/m³	0.0005	0.0005	0.0005
Filter-passing oils (gaseous and vaporous hydrocarbon compounds > C6)	mg/m³	0.0014	0.0017	0.0005
Total oil content	**mg/m³**	**0.002**	**0.002**	**0.001**

Table of contents Page

1 SCOPE OF MEASUREMENT 3
2 BRIEF DESCRIPTION OF THE COMPRESSOR AND THE CATALYTIC CONVERTER 5
3 DESCRIPTION OF THE SAMPLING POINTS 6
4 MEASUREMENT AND ANALYSIS METHODS, EQUIPMENT 8
5 OPERATING CONDITIONS DURING MEASUREMENT 9
6 SUMMARY OF MEASUREMENT RESULTS 9
7 ANNEX 11

Technical data

Model	Nominal flow at 7 barg	Max. over-pressure	Pipe diameter*	Weight**	Width**	Depth**	Height**	Power supply	Specific energy consumption during operation	Energy consumption at nominal flow	Installed power
	[Nm³/min]	[bar]		[kg]	[mm]	[mm]	[mm]	[V]	[kWh/Nm³]	[kWh]	[kW]
ETC-SV04	0.4	16	15 x 1.5mm	60	700	340	1400	230	0.009	0.2	1
ETC-SV1	1	16	18 x 1.5mm	140	860	455	1455	230	0.009	0.5	1.2
ETC-SV2	2	16	28 x 2 mm	160	860	455	1655	230	0.009	1.1	2.5
ETC-SV5	5	16	35 x 2 mm	360	1175	620	1890	400	0.007	2.1	5
ETC-SV7	7	16	42 x 2 mm	410	1175	620	1890	400	0.006	2.5	5
ETC-SV10	10	16	42 x 2 mm	590	1630	815	2100	400	0.005	3.0	10
ETC-SV15	15	16	DN 50	770	1630	880	2100	400	0.005	4.5	10
ETC-SV20	20	16	DN 65	900	1900	1140	2150	400	0.005	6.0	15
ETC-SV30	30	16	DN 65	1100	1900	1140	2150	400	0.005	9.0	21
ETC-S40	40	16	DN 80	1500	2200	900	2240	400	0.005	12.0	28
ETC-S50	50	16	DN 100	1700	2250	900	2240	400	0.005	15.0	28

* Connection dependent on options (see installation drawing)
** Weight and dimensions without pre-separator, VS module and particle filter

INNOVATION QUALITY RELIABILITY WORLDWIDE

ROTORCOMP VERDICHTER GmbH
Industriestrasse 9
82110 Germering
Germany
Tel.: +49 (0) 89 7 24 09-0
Fax: +49 (0) 89 7 24 09-38
etc@rotorcomp.de
www.rotorcomp.de

A member of BAUER GROUP

ETC®-SV 10.12 | Technical modifications and errors excepted.