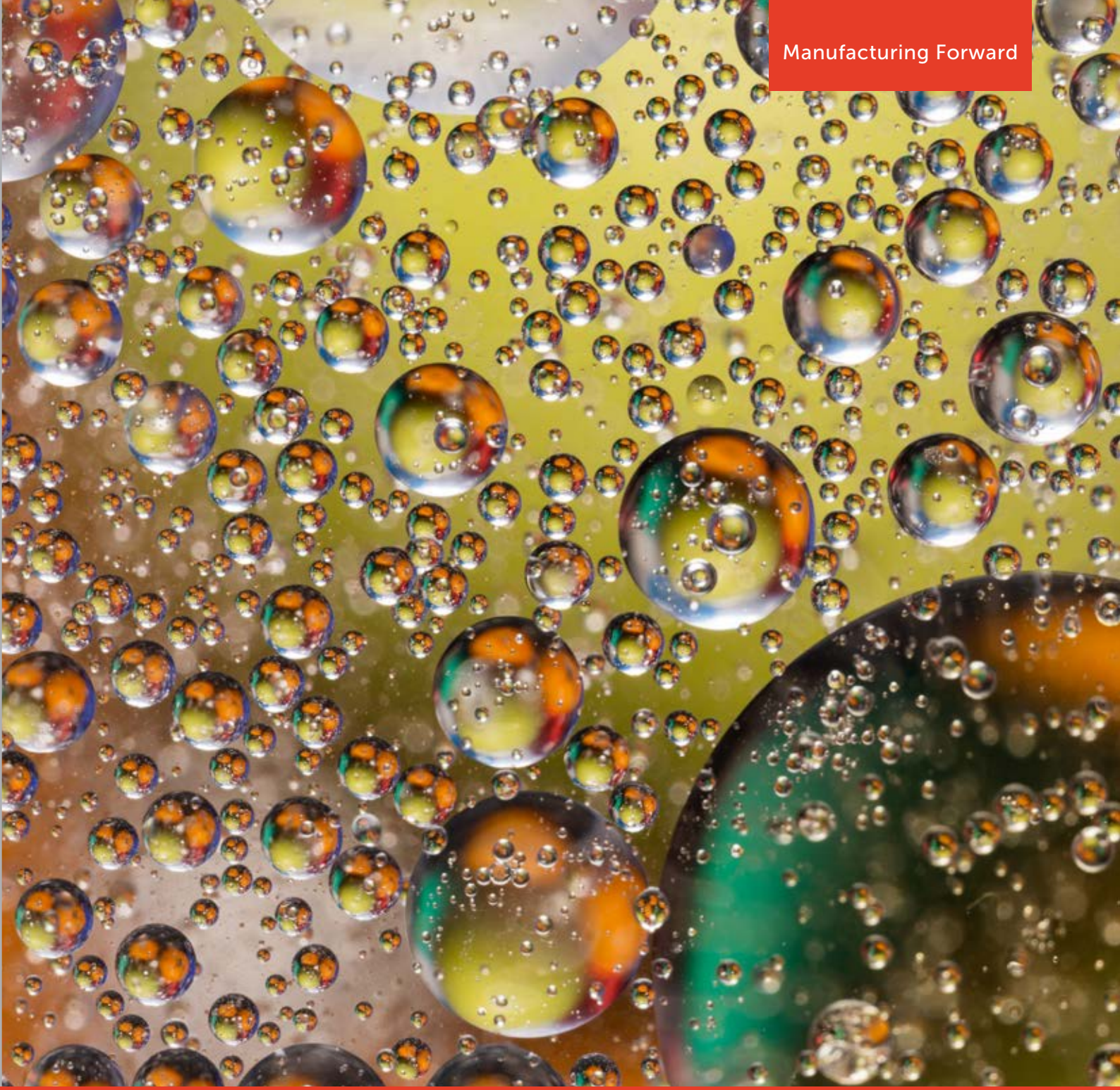


# MCC SERIES
# CATALYTIC CONVERTER

www.mikropor.com

mikropor

Manufacturing Forward

mikropor

Mikropor began its journey in 1987 with a passion to create "Tomorrow's Technology" and has become one of the leading manufacturers of atmospheric air filtration solutions and compressed air treatment systems for a variety of industries.

By closely following the latest developments in technology, Mikropor's "Best in Class" products and solutions are appreciated by customers in more than 140 countries.

The company's sustainable growth has been provided by its passion for innovation and commitment to quality, as well as its dedication to technology. Mikropor is an environmentally conscious company that values people, while developing products that extend the needs and expectations of customers.

With this mission, Mikropor continues to become one of the most recognized brands in the world by expanding its global penetration in the field of technological filtration and contributes to a healthier planet.

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# MCC SERIES CATALYTIC CONVERTER

Oil-free compressors are seen as the ideal solution for any application that requires oil-free air. For this reason, the majority of compressed air users prefer to install an oil-free compressor in their system.

However, oil-free compressors are more costly than their oil lubricated counterparts and do not necessarily deliver truly oil-free compressed air. Like all compressors, oil-free compressors can deliver what they receive from the ambient air. In industrial environments the ambient air typically contains between 0.05 to 0.5 mg/m³ of oil (hydrocarbons). When this atmospheric (ambient) air is compressed to 7 bar, the oil concentration output level of the oil-free compressor increases to between 0.4 and 4 mg/m³. This could not be considered oil-free air and will be a problem for the site if oil-free air is a strict requirement.

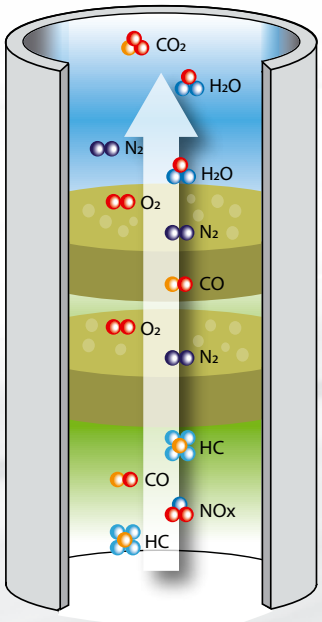
Mikropor has a more cost-effective solution to minimise compromises in a compressed air system with the new MCC Catalytic Converter. The MCC eliminates residual oil in compressed air by means of a catalytic reaction between the oil-laden air and the reactant (catalyst).

Mikropor's Catalytic Converters use a process of catalytic oxidation to actively transform the oil and hydrocarbons in compressed air and convert them to H2O and CO2 by utilizing a special type of catalyst.

Mikropor is delighted to present MCC which can be used as a perfect technical solution to obtain an oil-free compressed air system for a wide variety of industries. MCC Catalytic Converters deliver Class 0 oil-free compressed air in accordance with the ISO 8573-1 International Standard.

Oil content in compressor outlet air is reduced to less than **0.0025 mg/m³** by using heat-reactivated catalyst.

The clean exhaust exits the converter




$CO_2$
$N_2$
$H_2O$
$O_2$
NOx
HC
CO

With the effect of exhaust gases entering the catalyst, oxidation of carbon monoxide (CO) and unburned Hydrocarbons (HC) and reduction of Nitrogen oxides (NOx) occurs

$$C_xH_y + O_2 \longrightarrow CO_2 + H_2O$$

# MCC SERIES CATALYTIC CONVERTER

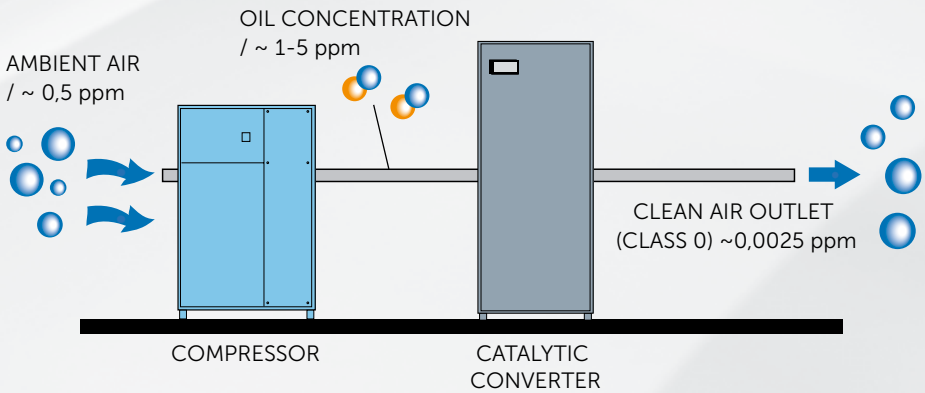
## Advantages

Mikropor's MCC Catalytic Converters have less investment & operating cost compared to oil-free compressors and provide;

- Cost reductions (By investing in an oil-flooded compressor with an MCC rather than using an oil-free compressor)
- Maintenance cost reductions
- Extended filter change periods
- Eliminated additional costs for separating oil condensate
- Avoidance of costly production standby and shutdown.
- Consistent air quality which will remain at the same level for the lifetime of the catalyst
- Extended service life of downstream equipment
- Reduced energy consumption (maximum 0.01 kWh/m³ at maximum load)

## Technical Structure Of MCC Series Catalytic Converter


1. Compressed Air Containing Oil From Compressor
2. Mist Eliminator
3. Particulate Filter
4. Heat Exchanger
5. Converter Vessel
6. Heater (Inside the Tank)
7. Catalyst (Inside the Tank)
8. Oil Indicator
9. Minimum Pressure Closing Valve
10. Electrical Enclosure
11. Oil-Free Compressed Air to Dryer
12. Controller User Screen



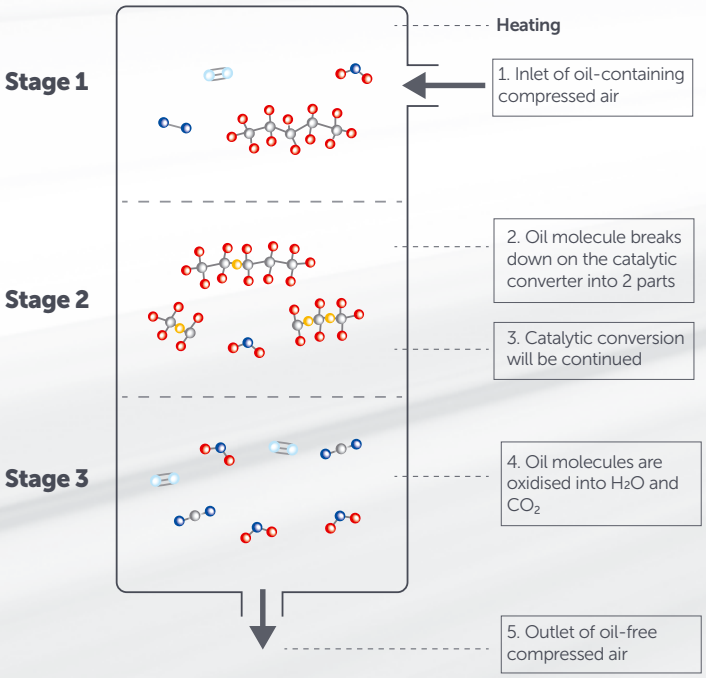
# MCC SERIES CATALYTIC CONVERTER

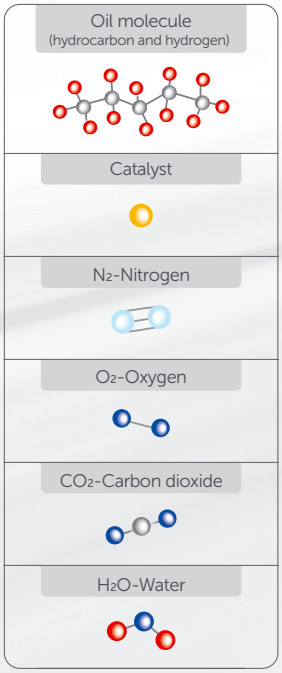
## Basic Working Principle of MCC Series Catalytic Converter

At the first stage, specially designed catalyst in MCC vessels is heated up to a certain temperature. The oily inlet air gets resolved into hydrocarbons when entering the heated up container. These hydrocarbons are converted into water and carbon dioxide by reacting with oxygen molecules on the catalyst surface. Thereafter, completely oil free Class 0 compressed air gets cooled by a heat exchanger and delivered right into the system without the need for any additional treatment.

## Standard Oil Indicator

Most users would like to be sure that they deliver oil free compressed air to their processes. The oil indicator which is standard on MCC Catalytic Converters proove that there is no oil in the compressed air after the MCC Catalytic Converter.



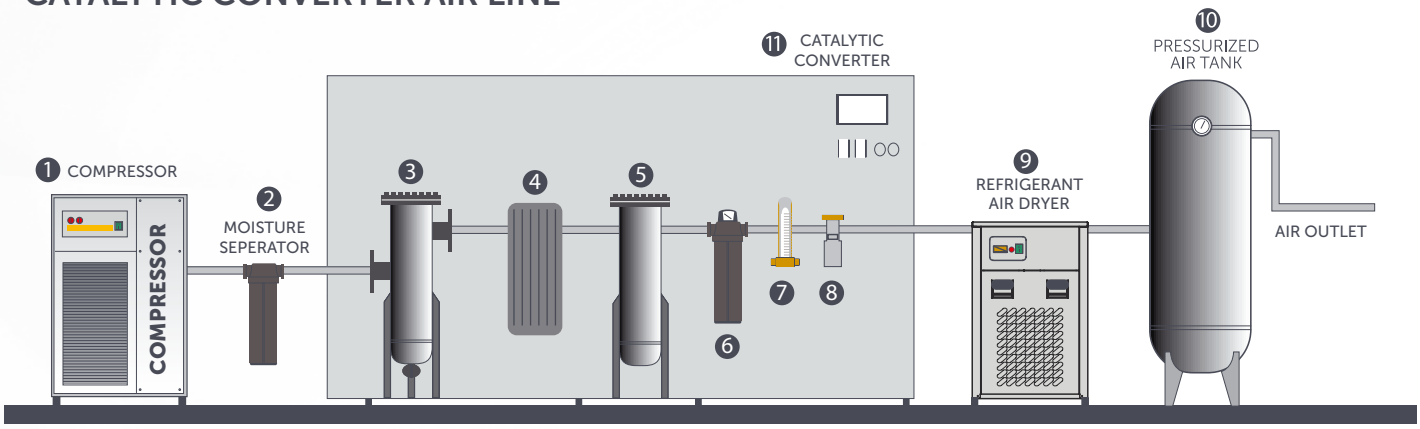




## MOI Mikropor Oil Sensor

Optionally, MOI Sensor is supplied along with the MCC Series Catalytic Converters. MOI Sensor reads any oil in the air and shows a digital oil level on the screen. The alarm level can be set to stop entire system and protect the process in case there is any oil in the air.

# Components Needed to Design an Oil-Free Class 0 Compressed Air System

## CATALYTIC CONVERTER AIR LINE




1- Compressor
2- Moisture Seperator (Standard)
3- Carbolescer
4- Heat Exchanger
5- Catalyst Tank
6- Compressed Air Filter (P) (Standard)
7- Oil Indicator (Standard)
8- Min. Pressure Valve (Standard)
9- Refrigerant Air Dryer
10- Pressurized Air Tank
11- Catalytic Converter

## Technical Specifications

| Model | Air Capacity ($Nm^3$/min) | Connection Size | Max. Working Pressure (bar) | Pressure Drop (mbar) | Voltage | Total Installed Power (kw) | Fuse Amp. | Specific Power Consumption (kWh/$m^3$) |
|---|---|---|---|---|---|---|---|---|
| MCC 11 | 1 | 1/2" | 16 | ≤ 400 | 230/1/50-60 | 1,2 | 16 | 0,009 |
| MCC 22 | 2 | 3/4" | 16 | ≤ 400 | 230/1/50-60 | 2,5 | 16 | 0,009 |
| MCC 55 | 5 | 1 1/4" | 16 | ≤ 400 | 400/3/50-60 | 5 | 20 | 0,007 |
| MCC 75 | 7 | 1 1/2" | 16 | ≤ 400 | 400/3/50-60 | 5 | 20 | 0,006 |
| MCC 110 | 10 | 1 1/2" | 16 | ≤ 400 | 400/3/50-60 | 10 | 20 | 0,005 |
| MCC 160 | 15 | 2" | 16 | ≤ 400 | 400/3/50-60 | 10 | 20 | 0,005 |
| MCC 210 | 20 | 2 1/2" | 16 | ≤ 400 | 400/3/50-60 | 15 | 50 | 0,005 |
| MCC 330 | 30 | 2 1/2" | 16 | ≤ 400 | 400/3/50-60 | 21 | 50 | 0,005 |
| MCC 430 | 43 | DN 80 | 16 | ≤ 400 | 400/3/50-60 | 28 | 50 | 0,005 |
| MCC 650 | 65 | DN 100 | 16 | ≤ 400 | 400/3/50-60 | 28 | 50 | 0,005 |

# MCC SERIES
# CATALYTIC CONVERTER

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