MANN+HUMMEL SintROC

A diesel particulate filter to set new standards

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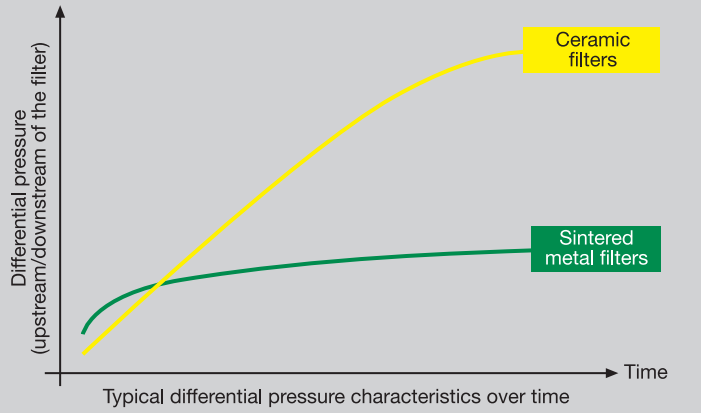
MANN+HUMMEL SintROC – a real trendsetter

SintROC stands for the latest generation of MANN+HUMMEL diesel particulate filters with continous regeneration. The series comprises 6 sizes for the output range 75 to 600 kW. The performance parameters and excellent flexibility of these new diesel particulate filters set new standards to reduce the emissions of industrial engines.

SintROC stands for Sintered metal, Robust and Continuous Regeneration. It combines the advantages of the existing MANN+HUMMEL diesel particulate filter system in one product. SintROC regenerates itself continuously without any downtime. The use of SintROC only requires an exhaust temperature above 380°C for 10% of the operating time and this condition is usually given in the output range specified for the SintROC filters. Thanks to the use of a sintered metal element the SintROC is a lifetime product. In contrast to diesel particulate filters with oxidation catalyst, the SintROC additionally reduces NO_2 emissions – an advantage which is especially unbeatable for applications with mining vehicles.

This complete system consists of the filter plus software, electronics and sensors and is also fully automatic.

The high performance of SintROC is based on the extensive experience of MANN+HUMMEL in the field of filtration technology. Companies and the environment both benefit from the competitive advantage achieved by this know-how.



Typical differential pressure characteristics over time

Advantages

- **Low running costs** through high ash holding capacity and easy cleaning with just a steam cleaner.
- **Low lifetime costs** thanks to sintered metal element. It is not necessary to replace the extremely robust element for the lifetime of the engine.
- **No machine downtime** – SintROC regenerates continuously during normal operation of the machine.
- **Quick regeneration** in just a few minutes thanks to use of an additive.
- **Reduces NO_2 emissions by up to 70%** – an advantage which is especially important for mining vehicles. The reduction of NO_2 emissions depends on the application.
- **No dependency on type of diesel fuel** – SintROC functions independently of the sulphur content of the diesel.
- **Higher engine perform ance, lower fuel consumption** – through beneficial backpressure characteristics in comparison to ceramic filters.

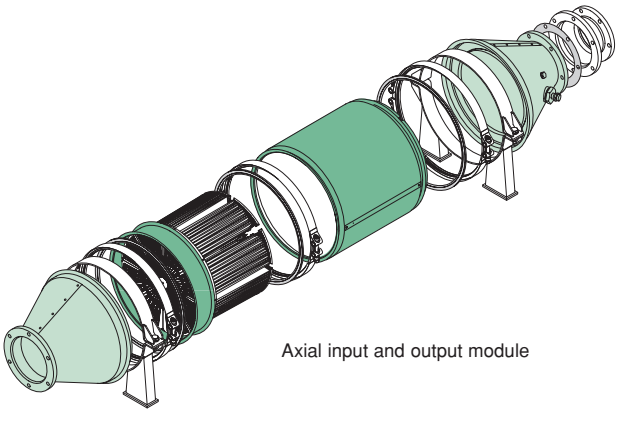
Intelligent system for engines up to 600 kW

Typical applications
SintROC is suitable for diesel applications in the output range of 75 to 600 kW and fluctuating power consumption, e.g. with mining vehicles, construction machines and agricultural machines.

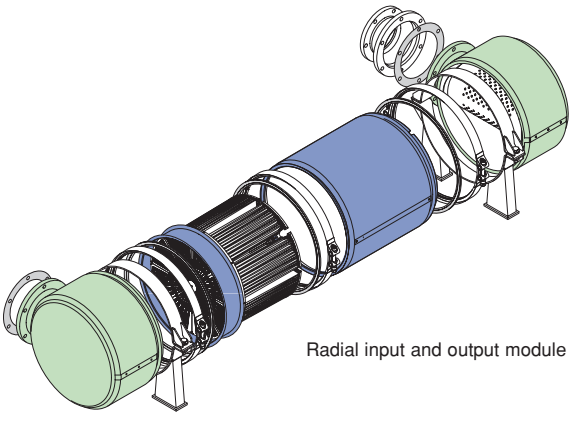
System components
- Filter module for exhaust gas cleaning
- Input/output module including seals and clamping rings for easy assembly
- Electronic control unit with display for regeneration with optical warning (including pressure sensor, temperature sensor)
- Cable harness for complete system provided
- Automatic additive dosing with level control and tank for additive
- Detailed documentation included

Accessories
- SintROC diesel additive DT7
- Mounting fittings for the filter module
- Extension for display in cabin (15 m or 25 m)

Options
- The input and output module is available as an axial or radial version
- Power supply 12 V or 24 V
- Additive tank sizes (2 l, 3 l, 5 l, 10 l, 15 l or 20 l)



Axial input and output module



Radial input and output module

Specifications

Overview of variations

Output [kW]	Filter* [m²]	Øexternal [mm]	Length** [mm]	Separation efficiency [quantity of particles]	Weight*** [kg]
75 - 140	5.4	354	675	99%	29.4
140 - 180	6.5	354	718	99%	34.4
180 - 220	8.1	354	807	99%	41.1
220 - 290	10.2	379	801	99%	44.5
290 - 470	2 x 8.1	both 354	both 807	99%	82.2
470 - 600	2 x 10.2	both 379	both 801	99%	89.0

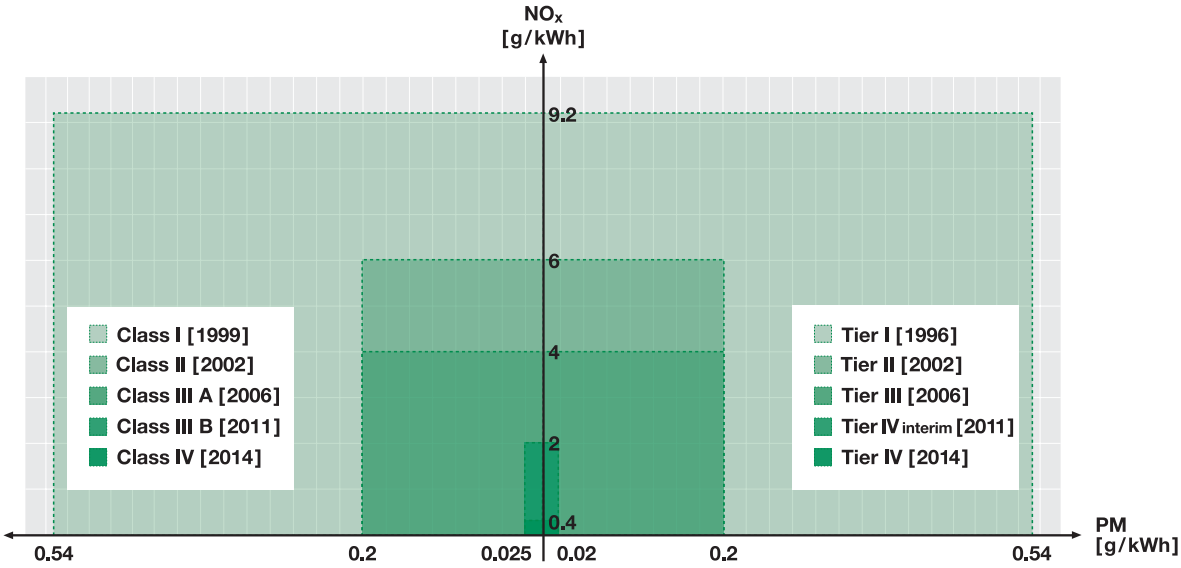
* Valid for engines with turbocharger and emissions class IIIA

** Details for radial – radial version

*** complete filter

Filter material	high-temperature chromium nickel steel
Filter housing material	1.4301
Surface temperature without insulation	max. 850°C
Ash holding capacity	max. 50 g/l filter volume
Separation efficiency (particle concentration in range 20 - 300 nm)	> 99%
Separation efficiency (relating to soot)	> 85%
Duration of the regeneration	3 - 5 minutes
Additive consumption	22 ppm
Additive substance content	Organometallic iron compound
Hazardous material class of additive	Xn; R48/22, R65, R66

Legal Conditions



EU – Non-road
EU directive 97/68/EU
for engine-power class 130 - 560 kW

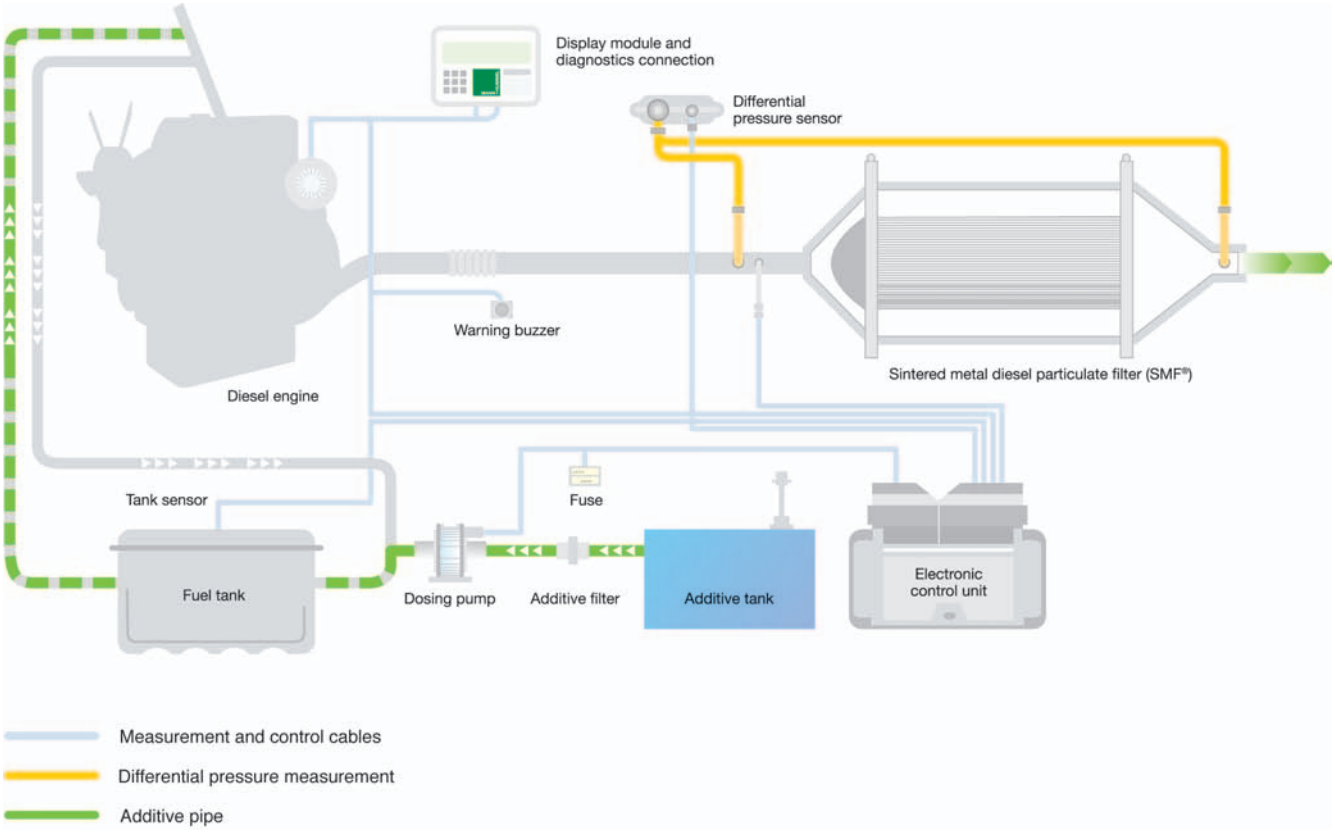
USA – EPA Non-road
regulations 40 CFR 89, 40 CFR 1039 and
40 CFR 1068 for class 130 - 560 kW

Functionality of the MANN+HUMMEL SintROC

The regeneration of the SintROC system is made continuously and is fully automatic as soon as the exhaust gas temperature exceeds 380°C. The additive automatically dosed to the fuel lowers the ignition temperature of the soot and accelerates the regeneration process. The sintered metal filter considerably reduces particle emissions by more than 99% for particle count in the range of 20 - 300 nm. The SintROC filters the soot, regenerates itself and also reduces the NO_2 emissions of the exhaust gas. The reduction of NO_2 depends on the amount of soot added to the filter. A NO_2 reduction of up to 70% is possible.

Conditions for use of the SintROC system:

- Exhaust gas temperatures on the filter > 380°C for at least 10% of the operating time
- Use for Tier I, Tier II or Tier III engines or comparable classes (e.g. EU)
- Permissible exhaust gas backpressure must be observed according to the application
- Engine output range 75 - 600 kW



MANN+HUMMEL Group

The MANN+HUMMEL Group is an international company with its headquarters in Ludwigsburg, Germany. The group employs more than 12,400 people worldwide at more than 41 locations.

The company develops, produces and sells technically complex components and systems for the automotive industry and many other fields. A key area is high quality filtration products for vehicles, engines and industrial applications. The OEM business with global market leaders and producers of vehicles, machines and installations defines the quality and performance of the products. Filters for the international aftermarket are sold under a variety of international brands as well as under the MANN-FILTER brand.

MANN+HUMMEL Industrial Filters

The Industrial Filters Business Unit has its headquarters in Speyer, Germany. The business unit is specialized in meeting the special requirements of off-highway vehicles and engine applications, compressed air and vacuum technology, mechanical engineering and plant construction.

MANN+HUMMEL Industrial Filters offers high performance for these fields and other fields which have a requirement for the filtration and separation of air, gas and liquids.

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