

Press release

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Smart A/C system by MAHLE: reduction of fine dust in the cabin

- Direct integration of fine-particulate sensors into the air conditioning system
- Air conditioning system can thus react faster and more precisely
- By merging functions, MAHLE's smart air conditioning system is more compact, lighter, and cheaper
- Newly developed fine-particulate filters complete the concept

MAHLE has developed a smart air conditioning system to support the fight against fine particulates in the vehicle cabin. Its main innovative feature is the integration of fine-particulate sensors directly into the air conditioning system. Because this gives the sensors immediate access to both cabin air and external air, the air conditioning system can react quickly and precisely to changing pollution levels and use the appropriate cleaning strategy to keep the air in the vehicle clean. The new solution from MAHLE offers several advantages in comparison with other systems available on the market: thanks to the functional integration within the air conditioning system, the solution is more compact, lighter, and cheaper. For this purpose, MAHLE has rounded out its innovative concept with newly developed fine-particulate filters that offer even greater efficiency.

“Customers will find that the air in the vehicle cabin is noticeably cleaner and the fine-particulate values in the car are lower thanks to our new smart air conditioning system,” explains Laurent Art, Director Advanced Engineering Thermal Management at MAHLE. “Furthermore, this new system lets them check the air quality in the vehicle in real time.”

Existing solutions measure the level of pollution using a complex stand-alone sensor or array of sensors, which is or are often connected via hoses to the central heating, ventilation, and air conditioning (HVAC) unit.

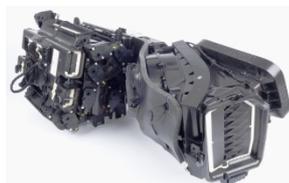
New generation of fine-particulate filters

In conjunction with its innovative sensor concept, MAHLE has developed a new generation of fine-particulate filters. The high dust extraction capacity exhibited

by these filters is near constant over their entire lifetimes, ensuring good cabin air in the long term. Fine particulates, solid particles, harmful gases, and environmental odors in the incoming air are reliably kept out of the vehicle cabin. Typical particles, such as brake dust, diesel soot, and tire debris, which are produced and transported by traffic on the road ahead, do not enter the cabin. The sensors integrated into the smart air conditioning system from MAHLE also ensure optimal service life for the filter elements. Furthermore, the filter protects the components within the air conditioning system from exposure to polluted air.



The new MAHLE approach allows a real time monitoring of cabin and outside air quality (picture exemplary).



The new sensor is directly integrated into the HVAC-unit (picture exemplary).

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About MAHLE

MAHLE is a leading international development partner and supplier to the automotive industry. The technology group is committed to playing an active role in transforming the mobility of the future by further optimizing the combustion engine, driving forward the use of alternative fuels, and laying the foundation for the worldwide introduction of e-mobility and other alternative drives, such as fuel cells. The group's product portfolio addresses all the crucial aspects of the powertrain and air conditioning technology.

In 2019, MAHLE generated sales of approximately EUR 12.0 billion and is represented in over 30 countries with more than 77,000 employees in 160 production locations and 16 major research and development centers. (Date 31.12.2019)