High-Precision Dosing Technology: Effective NOx Reduction with SCR Systems

Application Field

Airless/ Luftlos

Van / bus with E-SCR  Air assisted

Heavy construction machines

On-Road and Off-Road

Long distance traffic

Euro 5/6

EPA 2010

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Efficient application of SCR technology in vehicles requires not only the use of turbulence-generating compact metal substrates but also a specifically adapted dosing system to inject the reducing agent. The structures of the metal substrates, which have been optimised for their relevant function (oxidation catalyst, hydrosylation catalyst, PM filter and SCR catalyst), are characterised by low backpressure and a compact design. In addition to effective emission reduction, this also substantially reduces CO2 emission.

Large-scale applications, such as ship generators and locomotives, are supplied by feed pumps with a capacity of up to 960 l/h. These dosing pumps have a special and highly accurate adjusting mechanism for high and low flow rates. The urea dosing pumps can be used in air-assisted and airless systems with the full range of nozzles. All of Emitec’s aftertreatment products can be integrated in these applications. An optimum injector array ensures that the entire catalytic surface is utilised, especially in metal substrates with a large diameter.

Air-assisted dosing units offer a robust solution for on-road applications, such as trucks and buses, and for off-road applications. The design has been in series production since 2006 and complies with all relevant regulations worldwide. The system is based on a highly accurate feed pump with a dropper meter controller. The pump is installed directly on the vehicle chassis and uses pressurised air to inject the reducing agent into the exhaust pipe through a simple single-hole nozzle that delivers a very fine spray with SMD values below 30 µm. Various designs are available: a slave system, an ECU (or DCU) and a stand-alone system with an SCR dosing strategy for various sensors (also available for retrofit applications). The system communicates with the vehicle’s control unit via an electric interface. The injector is connected to the module via a hydraulic interface. The compact design of this robust series-production solution brings considerable space savings and is built to last for the lifetime of the vehicle.

3. In-Tank Dosing

Fully integrated dosing systems with a capacity of up to 8 l/h are used in passenger cars and light-duty vehicles. The module is installed in the bottom of the tank using a standard interface. The complete SCR feeding unit, including heating and fill level sensor, are integrated in the module.

The system communicates with the vehicle’s control unit via an electric interface. The injector is connected to the module via a hydraulic interface. The compact design of this robust series-production solution brings considerable space savings and is built to last for the lifetime of the vehicle.

2. Airless Dosing

Robust and durable airless dosing systems, based on accurate volumetric feed pump technology, are primarily used in off-road applications. The system has a capacity of up to 8 l/h and comes with a wide range of injection systems for underfloor installation and water-cooled versions for applications that are subject to higher temperatures.

4. Digital Dosing

Large-scale applications, such as ship generators and locomotives, are supplied by feed pumps with a capacity of up to 860 l/h. These dosing pumps have a special and highly accurate adjusting mechanism for high and low flow rates. The airless dosing pumps can be used in air-assisted and airless systems with the full range of nozzles. All of Emitec’s aftertreatment products can be integrated in these applications. An optimum injector array ensures that the entire catalytic surface is utilised, especially in metal substrates with a large diameter.

More information and further details are available from

SCR dosing system – for a variety of applications from cars to stationary engines and vessels

The four Emitec SCR platforms

1. Air-Assisted Dosing

2. Airless Dosing

3. In-Tank Dosing

4. Digital Dosing
SCR dosing system – for a variety of applications from cars to stationary engines and vessels

Efficient application of SCR technology in vehicles requires not only the use of turbulence-generating compact metal substrates but also a specifically adapted dosing system to inject the reducing agent. The structures of the metal substrates, which have been optimised for their relevant function (oxidation catalyst, hydrolysis catalyst, PM filter and SCR catalyst), are characterised by low backpressure and a compact design. In addition to effective emission reduction, this also substantially reduces CO₂ emission.

Robust and durable air-assisted dosing systems, based on accurate volumetric feed pump technology, are primarily used in off-road applications. The system has a capacity of up to 8 l/h and comes with a wide range of injection systems that are divided into air-cooled versions for underfloor installation and water-cooled versions for applications that are subject to higher temperatures. The Emitec NoNOx system is OBDII-compatible and supplied with standard connections and with standard I/O and CANbus communication. It is available as a slave version that is controlled by the engine management system or as an ECU version with fully embedded SCR dosing algorithm and diagnostics.

Air-assisted dosing units offer a robust solution for on-road applications, such as trucks and buses, and for off-road applications. The design has been in series production since 2006 and complies with all relevant regulations worldwide. The system is based on a highly accurate feed pump with a stepper motor controller. The pump is installed directly on the vehicle chassis and uses pressurised air to inject the reducing agent into the exhaust pipe through a simple single-hole nozzle that delivers a very fine spray with SMD values below 30 µm. Various designs are available: a slave system, an ECU (or DCU) and a stand-alone system with an SCR dosing strategy for various sensors (also available for retrofit applications). The system communicates with the vehicle’s control unit via an electric interface. The injector is connected to the module via a hydraulic interface. The compact design of this robust series-production solution brings considerable space savings and is built to last for the lifetime of the vehicle.

Large-scale applications, such as ship generators and locomotives, are supplied by feed pumps with a capacity of up to 800 l/h. These dosing pumps have a special and highly accurate adjusting mechanism for high and low flow rates. The air-assisted dosing units use a variety of pumps with a capacity of up to 960 l/h.

The four Emitec SCR platforms

1. Air-Assisted Dosing
2. Airless Dosing
3. In-Tank Dosing
4. Digital Dosing

More information and further details are available from
Efficient application of SCR technology in vehicles requires not only the use of turbulence-generating compact metal substrates but also a specifically adapted dosing system to inject the reducing agent. The structures of the metal substrates, which have been optimised for their relevant function (oxidation catalyst, hydrolysis catalyst, PM filter and SCR catalyst), are characterised by low backpressure and a compact design. In addition to effective emission reduction, this also substantially reduces CO₂ emission.

Large-scale applications, such as ship generators and locomotives, are supplied by feed pumps with a capacity of up to 960 l/h. These dosing pumps have a special and highly accurate adjusting mechanism for high and low flow rates. The urea dosing pumps can be used in air-assisted and airless systems with the full range of nozzles. All of Emitec’s aftertreatment products can be integrated in these applications. An optimum injector array ensures that the entire catalytic surface is utilised, especially in metal substrates with a large diameter.

Air-assisted dosing units offer a robust solution for on-road applications, such as trucks and buses, and for off-road applications. The design has been in series production since 2006 and complies with all relevant regulations worldwide. The system is based on a highly accurate feed pump with a dropper meter controller. The pump is installed directly on the vehicle chassis and uses pressurised air to inject the reducing agent into the exhaust pipe through a simple single-hole nozzle that delivers a very fine spray with SMD values below 30 µm. Various designs are available: a slave system, an ECU (or DCU) and a stand-alone system with an SCR dosing strategy for various sensors (also available for retrofit applications).

The system communicates with the vehicle’s control unit via an electric interface. The injector is connected to the module via a hydraulic interface. The compact design of this robust series-production solution brings considerable space savings and is built to last for the lifetime of the vehicle.

Robust and durable airless dosing systems, based on accurate volumetric feed pump technology, are primarily used in off-road applications. The system has a capacity of up to 8 l/h and comes with a wide range of injection systems that are divided into air-cooled versions for underfloor installation and water-cooled versions for applications that are subject to higher temperatures. The Emitec NoNOx system is OBDII-compatible and supplied with standard connections and with standard ECU and CANbus communication. It is available as a slave version that is controlled by the engine management system or as an ECU version with fully embedded SCR dosing algorithm and diagnostics.

Fully integrated dosing systems with a capacity of up to 8 l/h are used in passenger cars and light-duty vehicles. The module is installed in the bottom of the tank using a standard interface. The complete SCR feeding unit, including heating and fill level sensor, are integrated in the module.

The system communicates with the vehicle’s control unit via a hydraulic interface. The compact design of this robust series-production solution brings considerable space savings and is built to last for the lifetime of the vehicle.

More information and further details are available from...
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Van / bus with E-SCR
for more efficiency in urban traffic

Heavy construction machines
On-Road and Off-Road

Long-distance traffic
Euro 5/6
EPA 2010

Airless Air assisted

Luftlos
Application Field

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