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# BRIEF INFORMATION

## NOx sensor

- Tested in accordance with HELLA quality standards
- Complies with OEM specifications
- The product has been developed with particular attention being given to engine vibration resistance and also to increased temperatures
- NOx sensors are part of the standard equipment found in passenger cars as well as in commercial vehicles which comply with Euro 5 and Euro 6 regulations

## PRODUCT FEATURES

### Application

Comprehensive range available for passenger cars and commercial vehicles with different part numbers, suitable for the most relevant global applications.

### Design and function

The NOx sensor comprises a probe and a control unit. Via a cable harness these are firmly connected with each other to form a unit. This sensor unit is installed in the exhaust gas system and is used to recognise nitrogen oxides in the flow of exhaust gas.

The NOx sensor is an important component in the post-treatment system to reduce NOx, which is used in diesel vehicles with urea-based SCR systems (selective catalytic

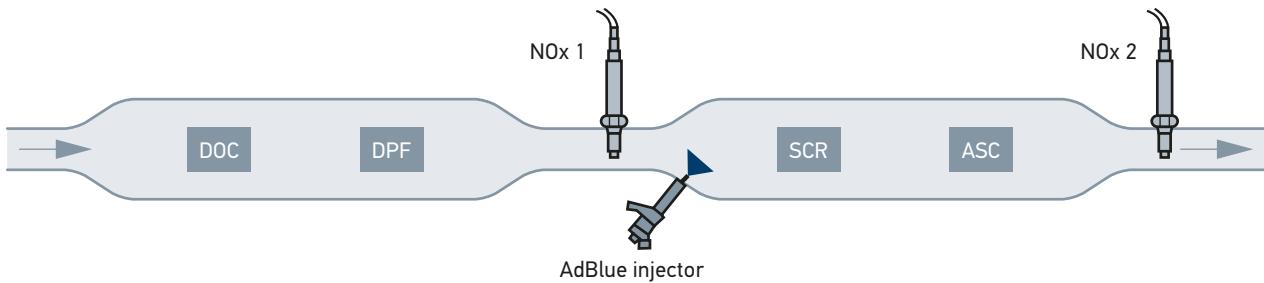
reduction). The sensor enables compliance with the stringent emission values starting from Euro 5 norm onwards. Consequently the NOx sensor guarantees an optimal dosage of AdBlue by the engine system, thus bringing about an effective reduction of nitrogen oxides which are harmful to the environment.

If the SCR system has an upstream and a downstream NOx sensor, the downstream one has the task of monitoring the effect of the SCR catalytic converter.

### Mounting

Easy to install because of 1:1 fit according to OE quality standards. Mounting instructions are supplied with the product.

# SCHEMATIC STRUCTURE



The exhaust gas flow resulting from the running of the diesel engine enters the diesel oxidation catalytic converter (DOC) and then the diesel particulate filter (DPF).

Once the particulate filter load of the DPF reaches a certain value, cleaning has to be carried out.

Such particulate filter regeneration is automatically triggered and monitored by the relevant higher-level system control unit.

What is more, vehicles with an SCR system (selective catalytic reduction) can be equipped in such a way so as to reduce amounts of nitrogen oxide.

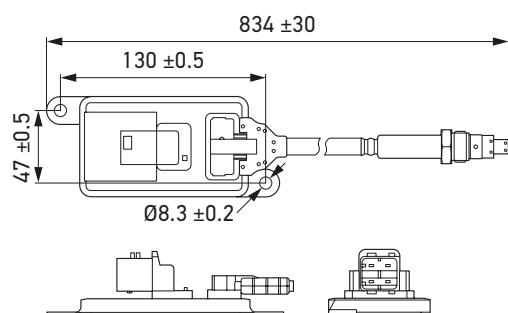
With the systematic addition of a reducing agent (AdBlue) to the exhaust gas system, a reaction takes place as a result of which nitrogen oxides (NOx) are converted into nitrogen (N<sub>2</sub>) and water (H<sub>2</sub>O). Furthermore, in combination with a cleaning catalyser (an ASC), excess ammonia (NH<sub>3</sub>) can be converted into nitrogen (N<sub>2</sub>).

## TECHNICAL DETAILS

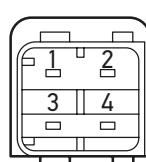
### Technical data

Supply voltage	12V & 24V
Measuring range	0 – 3000 ppm
Operating temperature	-40°C to 800°C
Vibration resistance	Yes
Sensor thread	M20 x 1,5
Weight	Approx. 300 g
Protection class	IP6K9K

### Dimensional sketch (example)



### Pin assignment (example)



Pin 1:	Power supply
Pin 2:	CAN high
Pin 3:	Ground
Pin 4:	CAN low

# Q&A

## – NOx sensors –



### What is a NOx sensor and what is its function in a vehicle?

A NOx sensor measures the nitrogen oxide content in the exhaust gases emitted by the engine into the atmosphere via the exhaust gas aftertreatment system.

### How can you choose the right NOx sensor for your vehicle?

Read the part number of the sensor to be replaced or look up the OE reference from the relevant EPC based on the VIN (vehicle identification number).

### How can we avoid diagnostic errors when considering replacing a NOx sensor?

Check the system before replacing the NOx sensor.  
Check the system after installation of the new NOx sensor.

### What happens when driving with a defective NOx sensor?

Once the fault has been detected, the vehicle's control unit starts a manufacturer-specific countdown based on the applicable emission regulations. This process soon leads to a continuous reduction of engine torque and vehicle speed over a designated period of time, thus giving the driver the opportunity to call in at the nearest specialist workshop and have the exhaust problem rectified.

### What is the most important factor that can shorten the service life of a NOx sensor?

Inadequate engine maintenance is one of the main factors that can shorten the service life of a NOx sensor. Over time this can lead to excessive engine wear, which in turn results in exhaust gas contamination, e.g. an imbalanced air-fuel mixture, which will then directly have a negative impact on the exposed sensor head.

### Which components can be affected by a defective NOx sensor?

It is important to note that failure to replace a defective NOx sensor over time can have serious and irreversible consequences for expensive components of the exhaust aftertreatment system, such as the DPF (diesel particulate filter) or the SCR (selective catalytic reduction).

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