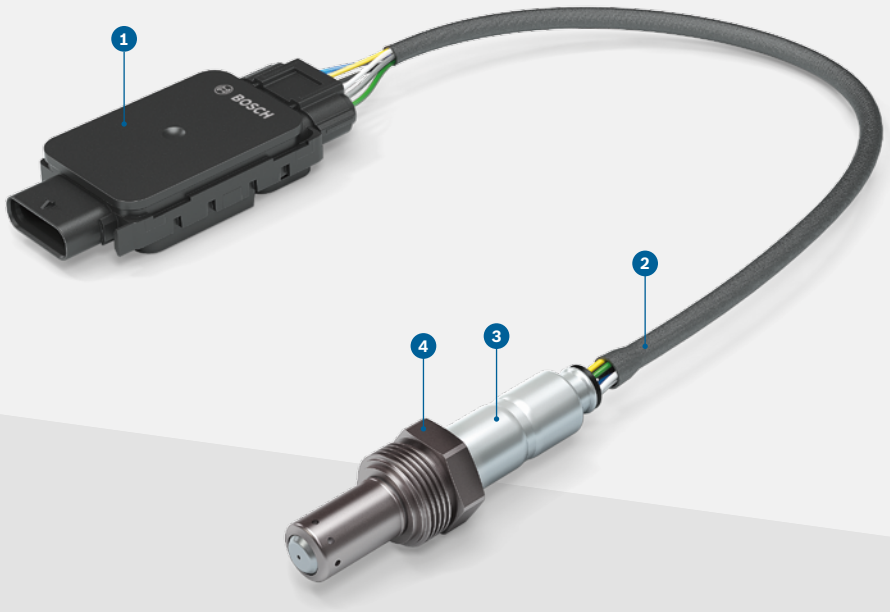
Exhaust-gas treatment

NO_x sensor EGS-NX

BOSCH
Invented for life



PRODUCT BENEFITS

- Contribution to achieve current and future emissions limits and on-board diagnostics regulations
- High measurement accuracy, fast readiness, good signal dynamics, continuous signal availability
- Can be used flexibly with CAN interface
- Resistant to external influences, such as thermal shocks, due to protection layer on the sensor element

1. Sensor control unit, 2nd generation
2. Wiring harness
3. Sensor probe, 2nd generation
4. Retaining screw

robust

Highly resistant to external influences, consequently longer service life and better signal quality

±10 ppm

Measurement accuracy (at 90 ppm) means precise data from the exhaust system – the basis for efficient exhaust-gas treatment.

Signal availability

No restrictions to monitoring and adaptation functions

TASK

Accurate, up-to-date data from the exhaust system is required to provide efficient exhaust-gas treatment. Especially when changing emissions legislation, further sensors may be required, including the nitrogen oxide sensor (NO_x sensor). This is used to provide control of the required amount of urea injected in SCR systems to reduce NO_x and to monitor (on-board diagnostics) the SCR components.

FUNCTION

The NO_x sensor is installed in the exhaust flow downstream and, depending on the application, also upstream of the SCR catalytic converter and measures the nitrogen oxide content in the exhaust gas. It is connected to the engine control unit via the CAN bus. At the heart of the NO_x sensor is a ceramic sensor element, which works on the amperometric double-chamber principle.

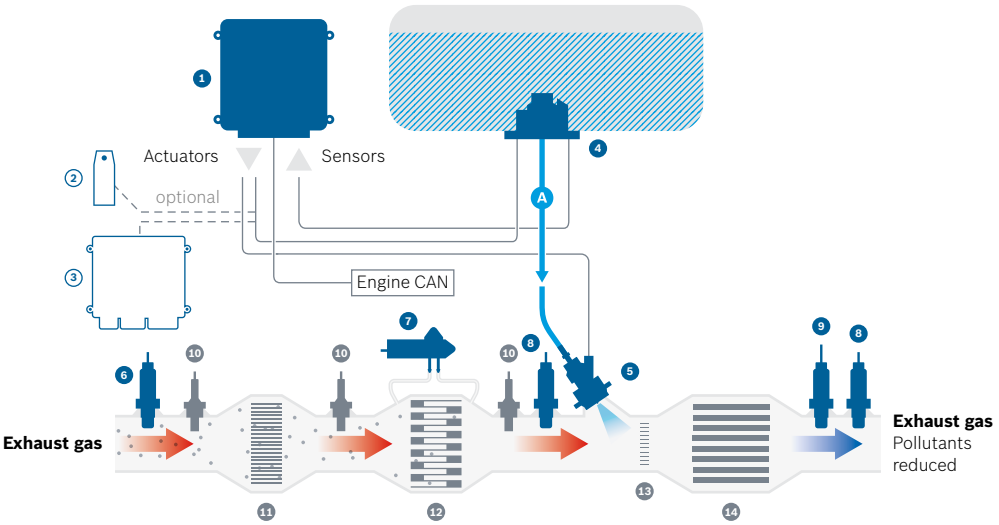
VARIANTS

Two generations (Gen1 and Gen2) of the NO_x sensor are available, which can both be used for passenger cars, light duty and commercial vehicles (on- and off-highway) and for 12 V and 24 V applications.

TECHNICAL CHARACTERISTICS

Measurement range	0 – 1,650 ppm
Measurement accuracy at 90 ppm (new/used)	±10/±12 ppm (preliminary)
NO_x response time t_{10-90}	~ 3,000 ms (dependent on measurement conditions)
O_2 range of NO_x measurement permits	$\lambda > 1$ to air
NO_x light-off time	80 s
O_2 measurement range	$0.8 < \lambda <$ air
O_2 measurement accuracy at $\lambda = 1.7$ (new/used)	±5 %/±8 % $\Delta O_2/O_2$ (preliminary)
O_2 response time t_{10-90}	< 800 ms (dependent on measurement conditions)
O_2 light-off time	30 s (preliminary)

Exhaust-gas treatment
Denoxtronic (PC/LD) and exhaust-gas sensors



Bosch components

1. Dosing control unit/ electronic engine control unit
2. Optional with engine control unit: heater control unit
3. Optional with engine control unit: glow control unit
4. Supply module
5. Dosing module
6. Lambda sensor
7. Differential pressure sensor
8. NO_x sensor
9. Particulate matter sensor

Other components

10. Temperature sensor
11. Oxidation catalytic converter (optional: NO_x storage catalyst)
12. Diesel particulate filter
13. Mixer
14. SCR catalytic converter

A AdBlue®

— Electrical connection

Heat/cold

Robert Bosch GmbH | PO 106050 | 70049 Stuttgart | Germany | **www.bosch-mobility-solutions.com**