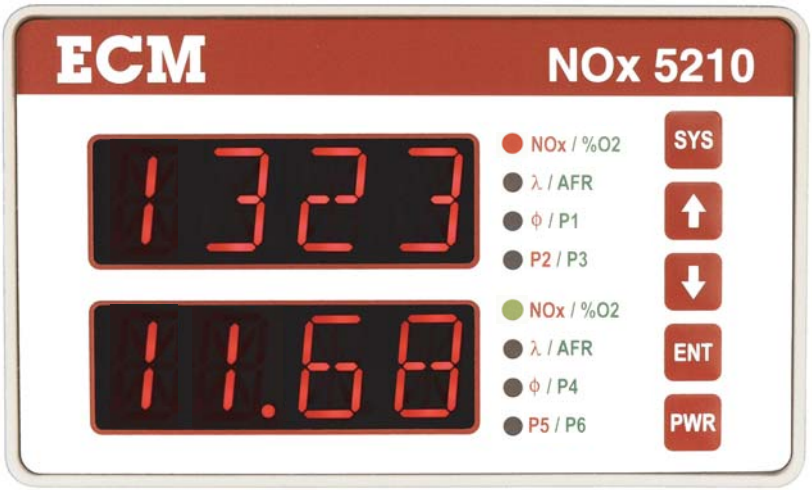
ECM NOx 5210

NOx Analyzer

Fast measurements of NO_X, Lambda, A/F Ratio, ϕ, and O_2 In Diesel, Lean Burn Gasoline, and Gas Turbine Engines

For Laboratory and In-Vehicle Use



⟶ **Analog Out**

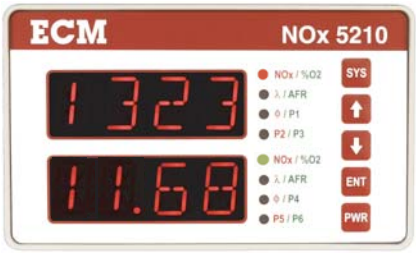
⟷ **CAN**

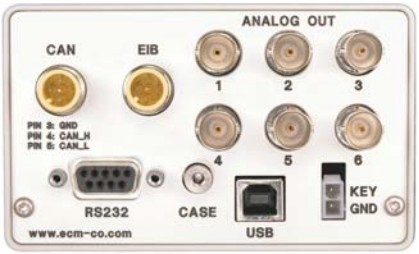
⟷ **USB**

⟷ **RS232**

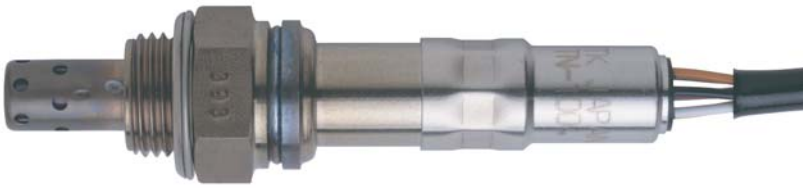
actual size

Single/Dual Channel • Compact • Highly Integratable





Uses Direct-Insertion Ceramic NOx Sensor



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ECM's NOx 5210 is a versatile and highly integratable NO_x, Lambda, and O_2 analyzer for the development of diesel, lean burn, HCCI, and gas turbine engines, and their aftertreatment systems. NO_x, Lambda, and O_2 are measured using a ceramic sensor that is mounted in the exhaust of the engine. Ease-of-use, speed, compactness, and robustness are hallmarks of this technology. No sample lines or pumps are required, simplifying installation and giving fast response. Distances of up to 100 meters between the sensor and analyzer are possible with no loss in response time or accuracy. All sensors have their calibration stored in a memory chip in the sensor's connector. Calibration can be performed by the user (Zero, Span) and is written into the same memory chip. This allows sensors to be calibrated in a central location and distributed to users, ensuring consistant results throughout a large test facility.

The NOx 5210 is programmable for all fuel types (H:C, O:C, N:C, and H_2). NO_x, Lambda (λ), A/F Ratio, ϕ, and O_2 and all sensor parameters including pumping currents, cell resistance, and sensor age factor are available for display and output. A second $NO_x/\lambda/O_2$ channel can be added and displayed/output.

The NOx 5210 is remarkably compact and is suited for both dynamometer and in-vehicle applications. With six analog outputs, CAN, USB, and RS232 communication, the NOx 5210 can be integrated into any data acquisition system. To simplify in-vehicle use, the NOx 5210 can be turned on and off with a signal from the vehicle's ignition switch. This feature along with the analyzer's CAN communication capability make it possible to use the NOx 5210 in the loop of a real-time emissions control strategy.

NO_x is of primary importance to engine and aftertreatment developers and legislators. The NOx 5210 makes this difficult measurement with ease and is a necessary tool for the development of modern powertrain systems.

Specifications

Ranges	**NO_x** 0 to 3000 ppm (for $\lambda \geq 1$ only), **λ** 0.4 to 25, **A/F** 6 to 364, **ϕ** 0.04 to 2.5, **O_2** 0 to 25%
Accuracies	**NO_x** ±30 ppm (0 to 1000 ppm), ±3% (elsewhere) λ 0.008 (at 1λ), ±0.016 (0.8 to 1.2 λ), ±0.018 (elsewhere) **A/F** ±0.15 (at 14.6 A/F), ±0.4 (12 to 18 A/F), ±1.0 (elsewhere) **ϕ** ±0.008 (at 1ϕ), ±0.016 (0.8 to 1.2ϕ), ±0.018 (elsewhere) **$\%O_2$** ±0.4 (0 to 2% O_2), ±0.8 (elsewhere)
Response Time	Less than 700 ms (NO_x). Less than 150 ms (λ, A/F, ϕ, O_2)
Fuel Type	Programmable H:C, O:C, and N:C ratios, and H_2
Analog Outputs	6 channels, 0 to 5V linearized and programmable for NO_x, λ, A/F, ϕ, O_2, etc
CAN	Programmable communication protocol
USB, RS232	Data transfer and control
Power	11 to 28 VDC, AC/DC (optional)
Sensor	18mm x 1.5mm thread
Size and Cable	105mm (W) x 64mm (H) x 165mm (D), 10mm cable (std), up to 100mm (optional)
Operating Temp.	-40 to +85°C
Options	Second $NO_x/\lambda/AFR/\phi/\%O_2$ channel, Rackmount Kit (holds up to 4 analyzers/8 channels), NOx sensor simulator, AC/DC Power Supply

ECM ENGINE CONTROL AND MONITORING
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