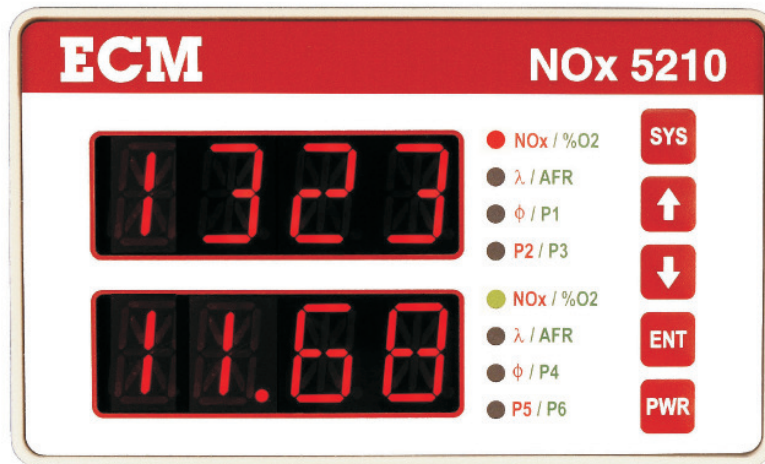


ECM NOx 5210

NOx Analyzer

Fast measurements of NO_x, Lambda, A/F Ratio, ϕ , and O₂
In Diesel, Lean Burn Gasoline, and Gas Turbine Engines

For
Laboratory
and
In-Vehicle
Use



→ Analog Out

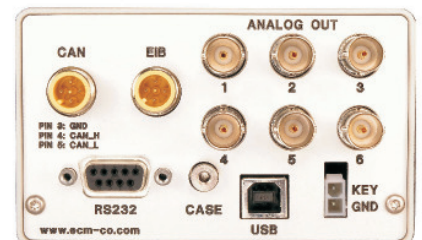
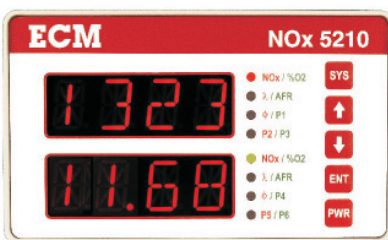
↔ CAN

↔ USB

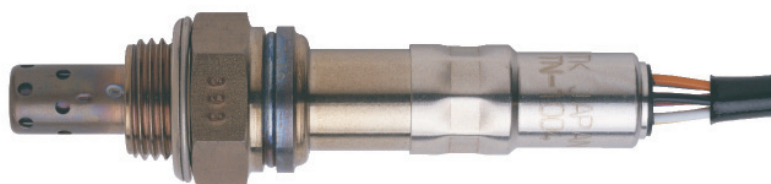
↔ RS232

actual size

Single/Dual Channel • Compact • Highly Integratable



Uses Direct-Insertion Ceramic NOx Sensor



actual size

ECM's NO_x 5210 is a versatile and highly integratable NO_x, Lambda, and O₂ analyzer for the development of diesel, lean burn, HCCI, and gas turbine engines, and their aftertreatment systems. NO_x, Lambda, and O₂ 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 consistent results throughout a large test facility.

The NO_x 5210 is programmable for all fuel types (H:C, O:C, N:C, and H₂). NO_x, Lambda (λ), A/F Ratio, ϕ , and O₂ and all sensor parameters including pumping currents, cell resistance, and sensor age factor are available for display and output. A second NO_x/ λ /O₂ channel can be added and displayed/output.

The NO_x 5210 is remarkably compact and is suited for both dynamometer and in-vehicle applications. With six analog outputs, CAN, USB, and RS232 communication, the NO_x 5210 can be integrated into any data acquisition system. To simplify in-vehicle use, the NO_x 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 NO_x 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 NO_x 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), $\pm 3\%$ (elsewhere) λ 0.008 (at 1 λ), ± 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 1 ϕ), ± 0.016 (0.8 to 1.2 ϕ), ± 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), 4m cable (std), up to 100m (optional)
Operating Temp.	- 40 to +85°C
Options	Second NO _x / λ /AFR/ ϕ /%O ₂ channel, Rackmount Kit (holds up to 4 analyzers/8 channels), NO _x sensor simulator, AC/DC Power Supply

ECM ENGINE CONTROL
AND MONITORING

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Techniques protected under patents issued and pending.

German ECM Distributor



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