LABCELL LTD

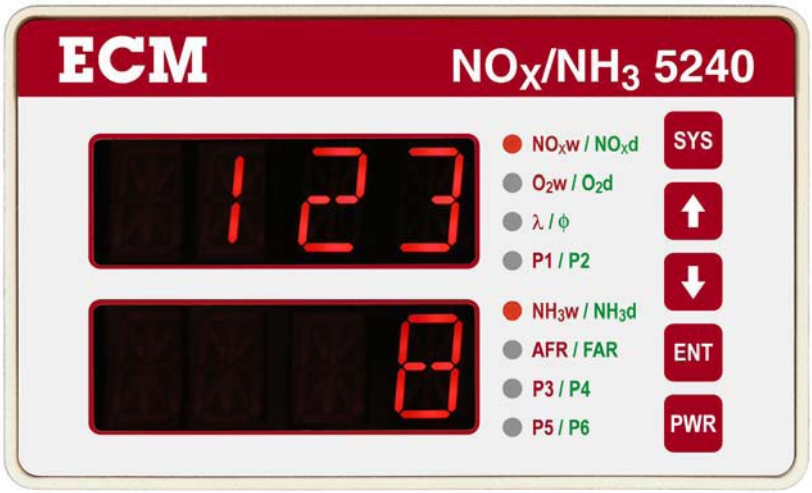
ENGINE TEST INSTRUMENTATION

ECM NO_X/NH_3 5240

NO_X and NH_3 Analyzer

Fast Measurements of NO_X, NH_3, O_2, Lambda, AFR, and ϕ

For Engine-Out and Exhaust Measurement Applications



Actual Size

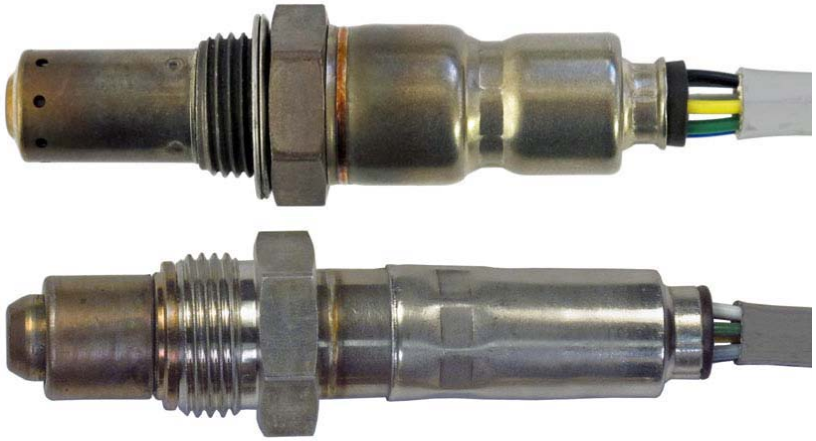
⟶ **Analogue**

⟷ **CAN**

⟷ **USB**

<u>Separately</u> Measure NO_X and NH_3

Uses Direct-Insertion Ceramic NO_X and NH_3 Sensors



ECM's NO_X/NH_3 5240 Analyzer is a remarkable instrument that combines the measurement of NO_X, NH_3, O_2, and Lambda into a single, compact package. Unlike all other ceramic NO_X sensor systems, the Model 5240 eliminates the cross-interference of NH_3 in the NO_X measurement and hence provides separate NO_X and NH_3 readings. By doing this, diesel engine SCR systems can be properly developed and tested since you now know whether an increased signal output is due to NO_X (i.e. urea dosing too low) or NH_3 (i.e. urea dosing too high). Distances of up to 100 meters between the sensors and the analyzer are possible with no degradation in response time. The sensors have their calibration stored in a memory chip in the sensors' connectors. Calibration can be performed by the user (Zero, Span) and is written into the memory chip. This allows sensors to be recalibrated in a central location (or by ECM) and distributed to users, ensuring consistent results throughout a large test facility.

The NO_X/NH_3 5240 is programmable for all fuel types (specified by fuel H:C, O:C, N:C ratios, or H_2). NO_X, NH_3, O_2, Lambda (λ), AFR, Equivalence Ratio (Φ), and all sensor parameters including pumping currents, cell resistance, and sensor age factor are available for display and output. For improved accuracy with high exhaust pressures, a pressure compensation kit is available.

The NO_X/NH_3 5240 is compact, yet easy to read, making it suitable for both dynamometer and in-vehicle applications. With six analog outputs, CAN, and USB communication, the NO_X/NH_3 5240 can be integrated into any data acquisition system. To simplify in-vehicle use, the NO_X/NH_3 5240 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 makes it possible to integrate the NO_X/NH_3 5240 into the loop of a real-time emissions control strategy.

Exhaust NO_X, NH_3, and O_2 concentrations are of paramount importance to engine and aftertreatment developers and legislators. The NO_X/NH_3 5240 makes these difficult measurements with ease and is an indispensible tool for the development of modern engine systems.

Specifications

Ranges	**NO_X** 0 to 5000 ppm, **NH_3** 0 to 1000 ppm **O_2** 0 to 25%, **λ** 0.4 to 25, **AFR** 6 to 364, **Φ** 0.04 to 2.5
Accuracies	**NO_X** ± 5 ppm (0 to 1000 ppm), ± 1% (elsewhere) **NH_3** ± 5 ppm (0 to 1000 ppm), ± 1% (elsewhere) **%O_2** ± 0.2 (absolute) **λ, AFR, Φ** ± 0.8% (at stoichiometric), ± 1.8 (average, elsewhere) **Pressure** ± 5.2 kPa (± 0.75 psia)
Response Times	Less than 1 s (NO_X, NH_3). Less than 150 ms (O_2, λ, AFR, Φ)
Fuels Supported	Programmable H:C, O:C, N:C ratios, and H_2
Analog Outputs	6 channels, 0 to 5V linearized and programmable for NO_X, NH_3, O_2, λ, AFR, Φ, etc.
CAN	Programmable communication protocol
USB	Data transfer
Power	11 to 28 VDC, AC/DC (optional)
Sensors	18mm x 1.5mm thread, 20mm 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 electronics, 950°C (maximum continuous) sensors
Options	Pressure Compensation Kit, Rackmount Kit (holds up to 4 analyzers/8 channels), NO_X/NH_3 Sensor Simulator, Extension Cables, AC/DC Power Supply

LABCELL LTD
FOUR MARKS, ALTON, HAMPSHIRE GU34 5PZ
TEL: ++44 (0)1420 568150 FAX: ++44 (0)1420 568151
e: mail@labcell.com www.labcell.com