Cambustion

NDIR50

New Instrument! Fast measurement of CO & CO_2

New! *Fast* Response CO & CO_2 Analyzer

- Transient CO & CO_2: Raw exhaust sampling
- Super sensitive yet ultra-fast for Air Quality / Ambient applications

- Time response from **15ms $T_{10\text{-}90\%}$**
- Measurement of λ / φ in 15 milliseconds
- Air Quality applications
- Transient EGR measurement
- Particle filter regen (carbon oxidation)
- Catalyst light-off & breakthrough
- Medical inhalation & exhalation in real time
- Battery fire onset detection

Introduction

Launched in 2022, the NDIR50 is designed for engine, medical & air quality applications with a $T_{10\text{-}90\%}$ time response of 15 ms.

Engine measurements

The NDIR50 simultaneously measures both CO and CO_2 via the industry standard detection method of Non-Dispersive Infra-Red (NDIR). The heated sampling system allows for raw (wet) exhaust gas to be analysed and fast lambda to be derived from the results. Transient EGR can also be measured in the intake system and pre- and post-catalyst or cold start optimisation can be undertaken with insight into this highly transient condition.

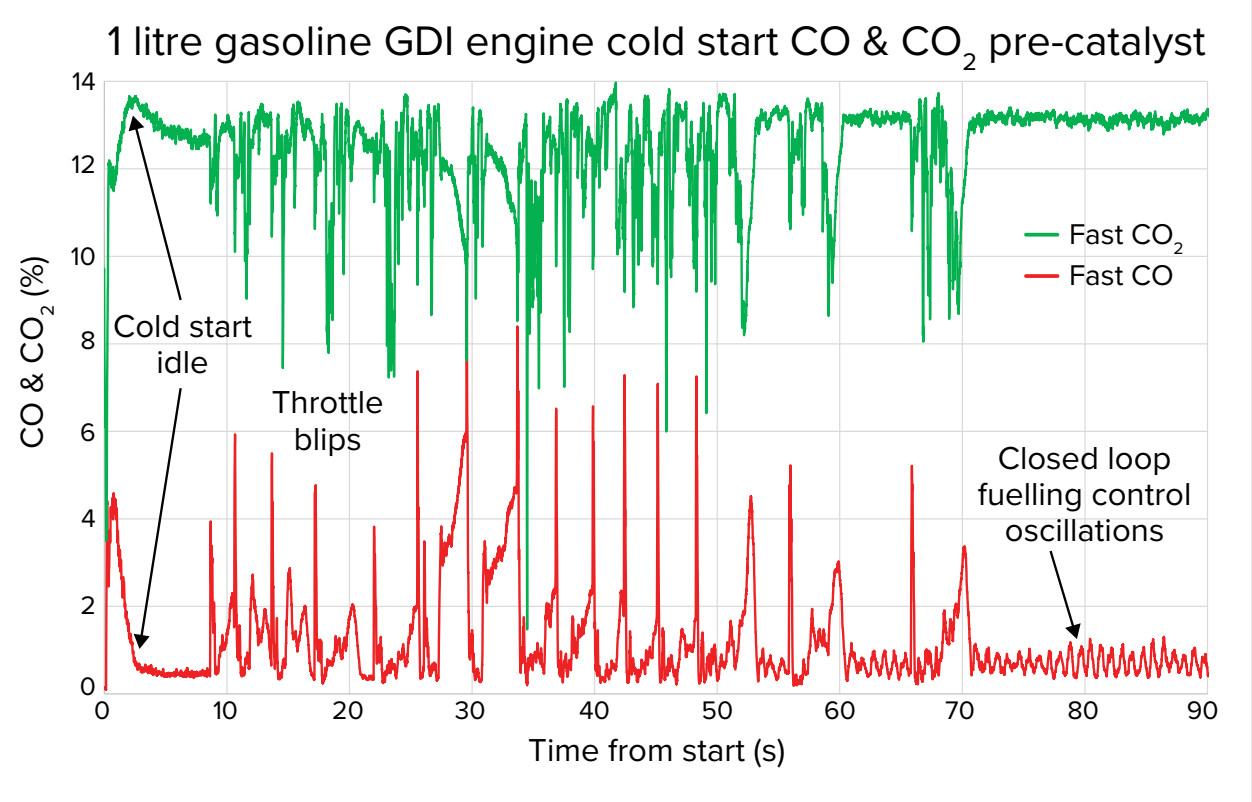
Inhalation/exhalation measurements

The fast response and good sensitivity can be used to compare inhaled vs. exhaled concentrations of CO_2 within single breaths.

Air Quality / Ambient Mode

A super-sensitive version has been developed to detect the dilution rates from passing or pursued vehicles and thereby calculate the raw emissions (detected using other fast response analysers).

The transient measurements of CO & CO_2 have also been used for model validation of the onset of battery fires (as the carbon begins to combust).

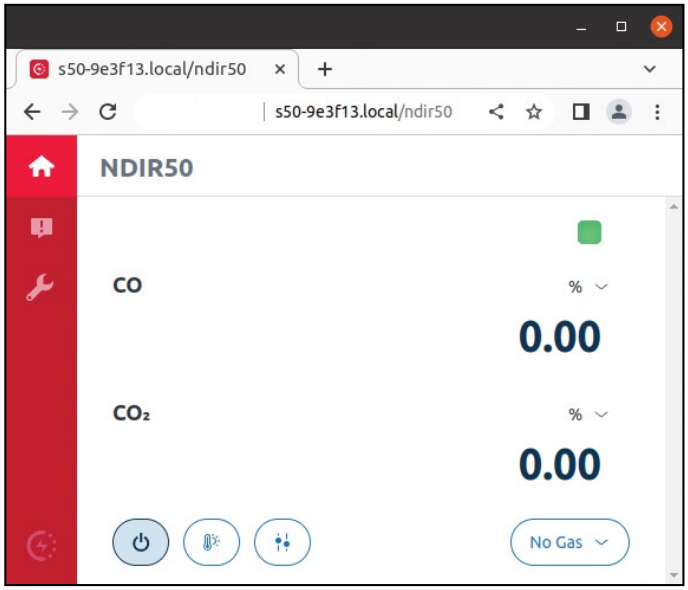


Specifications:

Measurement principle	Non-Dispersive Infra-Red (NDIR)
Number of channels	One: 3m (heated) / any length (unheated)
Time response $T_{(10\text{-}90\%)}$	15ms
Sample pressure range	0.8 – 1.3 bar absolute
Sensitivity	10ppm / √Hz (single range: ppm to 25%)
Dimensions	45 x 37 x 13cm
Weight	14 kg
On-board Data logger	10Hz
Data output	Analogue: 10Hz & 100Hz Digital: 10Hz or AK
Gas required	High and low concentration blended CO & CO_2
Calibration gas flow rate	7 litres / min
Electrical supply	90-240V 50/60Hz 350W max

A new digital data platform

The NDIR50 maintains the NDIR500's analogue output option, but now includes 10Hz digital data output.



Patent No. GB2582600

All specifications subject to change without notice

Cambustion is an independent, privately owned company with headquarters in Cambridge, UK and customers in more than 30 countries worldwide

Cambustion continue to research & develop novel instrumentation, and now also offer Measurement Consultancy; helping our global clients to solve a wide range of particle and gas measurement issues.

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