

NEW
GM 700



Product Information

GM 700
Oxygen Monitoring in
Car Exhaust Gas



SICK | MAIHAK

Effective controlling of engines and exhaust gas systems.



Developing engines and exhaust gas systems requires rapid and precise control measurements. Due to the In-situ technology of SICK-MAIHAK there are solutions available with shortest response times directly in the exhaust gas stream.

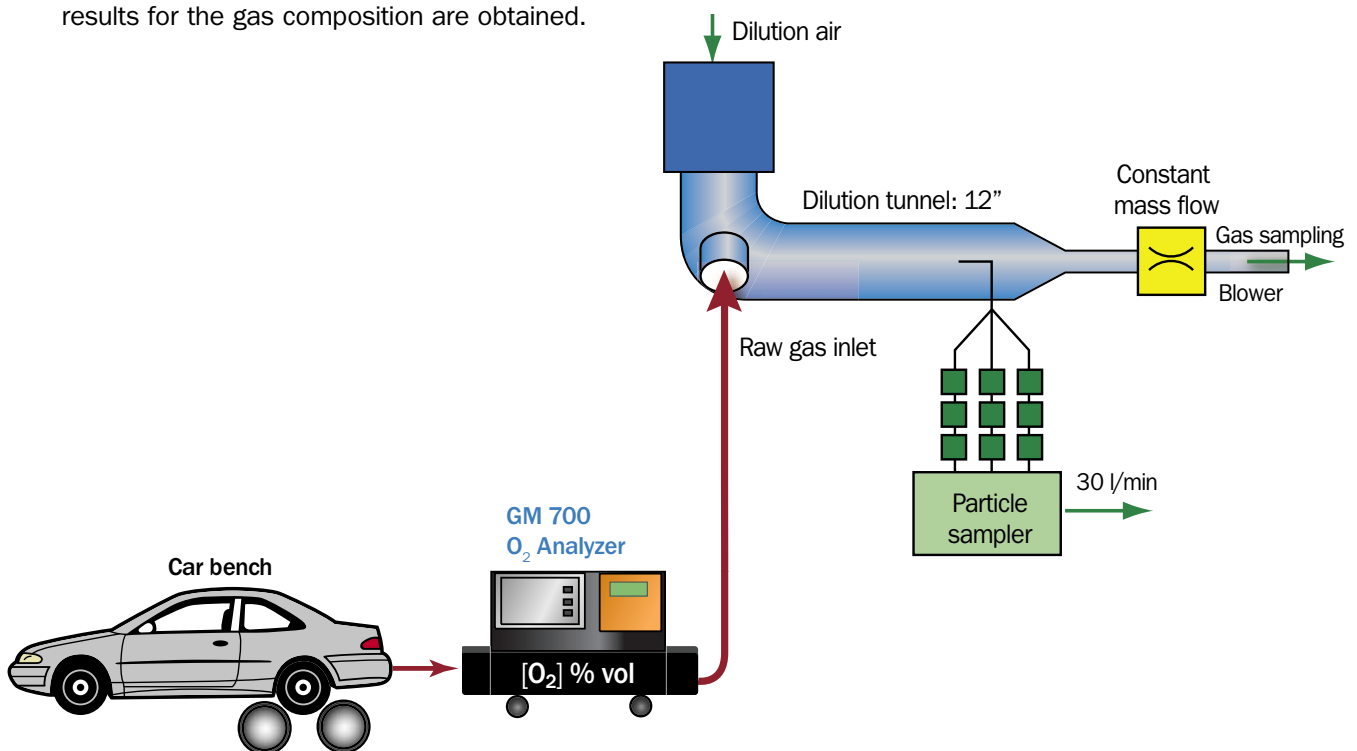
Measurement Task

The temperature of a car engine changes once it has been started. While driving, fuel and air demand change with engine load or car speed. Here, the fast reacting car electronics take control. Comparative measurements taken on test benches are expected to reflect the result of the motor control, thus requiring a fast response of the measurement equipment.

Oxygen is one of the most important exhaust gas parameters. Therefore, it is measured by the car's own Lambda-Probe in the catalytic converter. With different fuels (diesel or gasoline), totally different results for the gas composition are obtained.

Measurement Technology

The shortest response time possible is ensured by a measurement directly in the exhaust gas stream. As a further advantage of these In-Situ-measurement systems, the gas is not being fed through a conditioning system. Therefore there's no dead-time and no change of the gas composition. The gas stream emerging from the exhaust pipe is lead through a measurement cell without any restrictions or flow resistance. Essentially, this cuvette consists of a heated tube, with the analyzer parts attached to both ends.



Mobile and compact measurement systems,
flexibly applied, – no additional requirements like
sampling or conditioning. Long-term accurate and
independent from other components in the gas.
Simple Handling and minimal maintenance effort.

O₂ Analysis with the GM 700

The GM 700 Analyzer is based on the TDLS technologies (Tunable Diode Laser Spectroscopy). It measures the oxygen content of car exhaust gases fast and continuously. Since the TDLS method provides high selectivity (selection of one absorption line), the analyzer's measurement results are highly accurate and nearly free of cross-interference from other gas components. This suits the GM 700 outstandingly for emission minimizing with prototypes or optimizing of engines on test benches.



Specifications	GM 700
Measured quantity	oxygen
Measuring principle	TDLS (Tunable Diode Laser Spectroscopy)
Measuring range	0...10 vol% 0: 25 vol%; depends on fuel
Exhaust gas temperature	up to 480 °F (570 °F max)
Response time [t ₉₀]	0.2 sec
gas connection	G2½" quickrelease connector
Interfaces	3 analog outputs, 1 analog input; 3 relays; RS 232 service interface

Features and Advantages

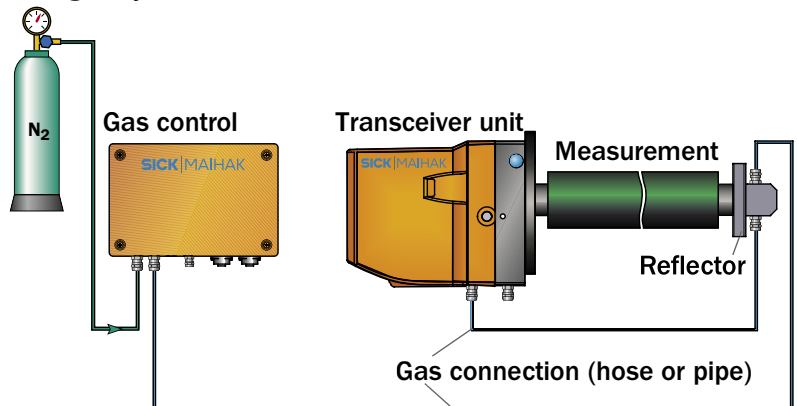
- TDLS measuring method – high selectivity and
- Simultaneous rapid gas analysis at lowest concentrations
- No moving parts, no wear-and-tear
- No pressure loss, no influence on engine characteristics
- Applied to the roll benches and test stands for diesel and gasoline engines

GM 700 System

The GM 700 System consists of a compact measurement cell, with other system components directly attached to:

- Transceiver Unit for measurement of the O₂ concentration in the exhaust gas
- Reflector
- Evaluation Unit for operation, display and output of measurement results
- Gas Control Unit for nitrogen purge, to avoid falsification due to air inside the housing.
- Temperature Control Unit for the cell heaters to avoid condensate build-up.

Nitrogen cylinder



The dialogue continues.

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Yes, I would like to know more about the field of:

- | | |
|--|---|
| <input type="checkbox"/> In-process gas analysis | <input type="checkbox"/> I would like a detailed consultation with one of your project advisors. Please arrange a meeting for me. |
| <input type="checkbox"/> Flue gas monitoring | |
| <input type="checkbox"/> Emission monitoring | |
| <input type="checkbox"/> Dust measurement | |
| <input type="checkbox"/> Volume flow measurement | |
| <input type="checkbox"/> Data acquisition and evaluation | |
| <input type="checkbox"/> Water analysis | |
| <input type="checkbox"/> Liquid analysis | |
| <input type="checkbox"/> Level measurement | |
| <input type="checkbox"/> Tunnel sensors | |
| <input type="checkbox"/> Special measurement technology | |

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