



The image shows the RMG PGC 9301 process gas chromatograph, a blue industrial unit with a control panel and a sample inlet. It is set against a dark blue background with a glowing blue wireframe grid floor and a glowing blue wireframe sphere in the background.

RMG PROCESS GAS CHROMATOGRAPH PGC 9301

The PGC 9301 process gas chromatograph analyzes the composition of natural gas or upgraded biomethane and determines their most important components.

About the PGC 9301

Function and structure

Gas quality matters. The PGC 9301 from RMG stands for advanced gas quality measurement tested according to OIML R140.

The PGC 9301 process gas chromatograph analyzes the composition of natural gas or upgraded biomethan and determines their most important components (up to 11) in mol % proportions. From these proportions, the following quantities are calculated (according to ISO 6976 or GPA 2172-09): Superior and inferior calorific value, standard density, density ratio and Wobbe number (optional the methane number as well). Be ready for the change of gas qualities in the network.



Reliable in use

Renewable energy is on the rise and brings fluctuations in natural gas quality. This increases the need for additional measurements of hydrogen and oxygen components to accurately determine the gas composition.

Proven performance

Precise analysis of gas composition is crucial for the efficient use of natural gas in various applications. Modern measurement technologies ensure continuous monitoring and adjustment of gas quality to ensure a stable and secure energy supply. These technologies are robust and reliable, even under changing conditions, and contribute to successfully meeting the challenges of the energy transition.

Variants of the PGC 9301 family:

- **PGC 9301**
 - for natural gas applications
 - 11 components C6+
- **PGC 9301 Biogas**
 - for biomethan + natural gas
 - up to C4+
 - measurement of H₂S and COS
 - direct replacement for other devices

Precise by design

The measurement accuracy of the PGC 9301 is ± 0.10 percent (calorific value and standard density). The instruments are therefore suitable for demanding applications in the field of renewable energies, biogas and PowertoGas – you can reduce your operating costs and get even more accurate and reliable energy consumption data.

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Reliable technology

To calculate the gas compressibility, the PGC 9301 measures the compressibility based on the AGA 8 compressibility index. The percentage of up to eleven different main natural gas components is measured. This data will be used for calculating the upper and lower calorific value, standard density, relative density and Wobbe index, taking into account the constituent characteristics in accordance with the ISO 6976 or GPA 2172-09. The reliable measurement method enables determination of the energy content of measured gas for fiscal purposes. The PGC 9301 process gas chromatograph from RMG meets all the requirements of the rapidly growing natural gas industry.

Fully integrated: Guaranteed accuracy

The instrument accurately determines the calorific value of natural gas, helping to reduce costs while lowering carrier consumption. The PGC 9301 process gas chromatograph consists of five main components: the measuring unit, analytical computer, sample probe, pressure reducer and gas supply unit. The measuring units are designed according to the modular principle and are equipped with two column modules.

Thanks to its modular design, the PGC 9301 can be flexibly integrated into existing plants and systems – ideal for individual installation concepts in gas transport, storage or industrial applications.

Requirements and areas of application

Meeting requirements

In addition to determining superior calorific value and standard density, the PGC 9301 provides key parameters required for gas quality assessment. These include relative density, Wobbe Index, calorific value and optionally, the methane number. The resulting data supports accurate billing, process optimization, and compliance with industry standards.

Reliable performance

RMG has refined gas chromatographic analysis to ensure reliable and long-term stable operation. Inside the PGC 9301, individual gas components are separated in dedicated capillary columns before being detected and quantified by a thermal conductivity detector (TCD).

A continuous carrier gas stream transports the sample through the analytical system, enabling precise determination of component concentrations. To maintain measurement performance over time, the chromatograph performs automatic calibration at configurable intervals using reference gases with known compositions.

Various areas of application

Beyond custody transfer measurements, the PGC 9301 provides valuable process data for a wide range of gas-related applications. Its analytical computer calculates additional quality parameters and can integrate external measurement signals, such as ambient temperature, dew point or pressure.

The system can also collect and process status information from connected equipment, enabling centralized monitoring and diagnostic functions within the overall installation.

Fields of application

- Custody transfer operation
- Legal metrology
- Biogas plants
- Gas blending and mixing control
- Power-to-gas applications
- Gas transmission networks
- Gas distribution networks



The PGC 9301 can be used anywhere in the world. General approvals such as ATEX and IECEx are available; local metrological approvals may apply.



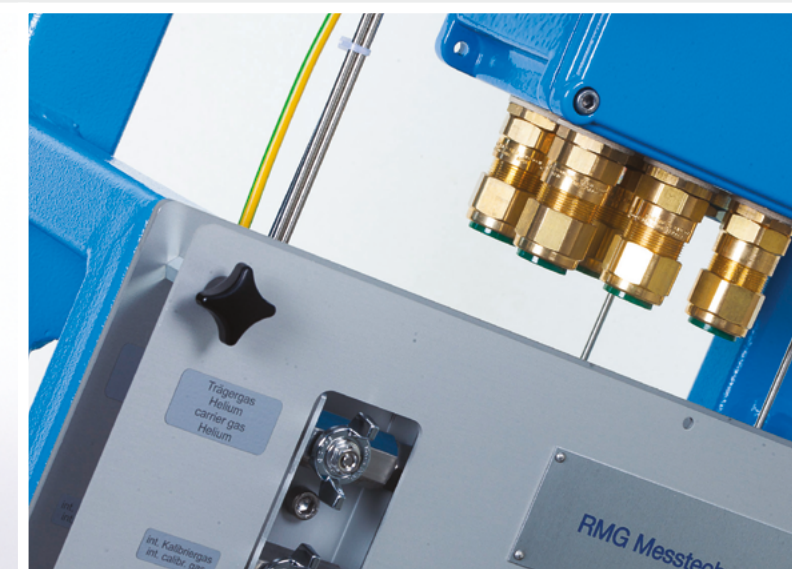
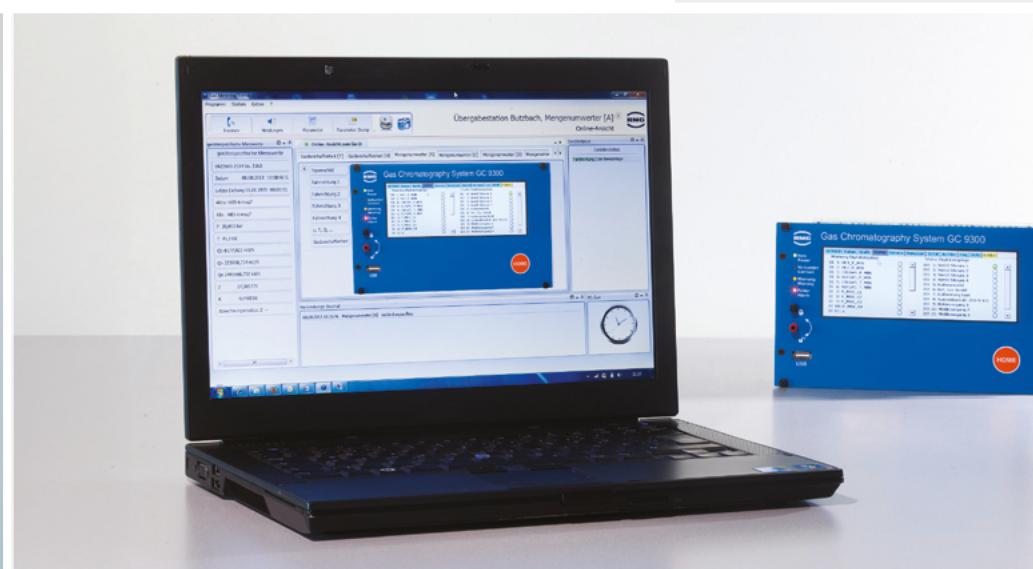
Interaction directly on the device or remote

Simple operation

The user interface of the PGC 9301 analyzer computer is a touch screen with a graphical interface that allows intuitive operation of the instrument. Individual parameters are described with help texts; the programmable display provides quick access to the 20 most important parameters or values.

Flexible communication

The analytical computer of the chromatograph has two TCP/IP interfaces: one for communication with the measuring unit and the other one for the operator and the RMGViewGC operating software. The analytical computer also supports a screen for remote operation via an Ethernet connection. On-site maintenance and field service can be minimized.



Most important features

- Modular system for measuring the composition of natural gas and biomethan, including gases from a mixture of hydrocarbons, air and optionally hydrogen
- OIML R140 Test for determining the molar fractions of gas components, as well as the calorific value and standard density
- Measurement of natural gas and biomethan using helium as carrier gas.
- Single and multi-stream version for gas from up to two measuring points
- Detailed archives and logbooks for storage of measured values and messages, also of chromatograms for one week
- Digital communication via network, DSfG and Modbus
- Additional analog and digital inputs and outputs for connection to an external module equipped with a serial interface
- Low maintenance system, only recording of operating parameters
- Analytical computer with touchscreen for easy operation

Subject of technical changes

RMG[•]
ONE STEP AHEAD

For further information

To learn more about RMG's advanced gas solutions, please contact your RMG account manager or visit www.rmg.com



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