Process Gas Chromatograph PGC 9300
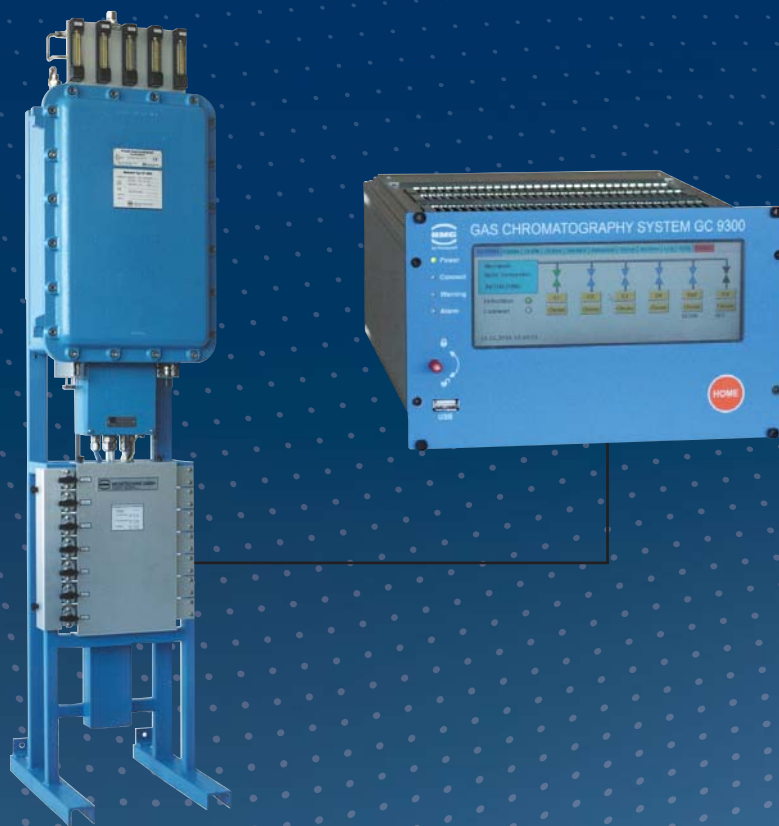
PRODUCT INFORMATION

Serving the Gas Industry Worldwide

RMG

by Honeywell

Method of operation

The PGC 9300 process gas chromatograph analyzes the composition of natural gas or biogas and determines the major gas components (up to 14, depending on the version of the measuring element) as contents in mol%. From these contents, the following variables are calculated (as per ISO 6976 or GPA 2172-09): superior and inferior calorific value, standard density, relative density and Wobbe index (optionally also the methane number).

Fields of application

The PGC 9300 process gas chromatograph is available in 4 different versions with 2 or 3 column modules, measuring different gas components:
① standard version with 2 modules for natural gas:
    11 components up to hexane.
② biogas version with 2 modules:
    9 components up to butane including O_2 and H_2.
③ C6 version for natural gas/biogas with 3 modules:
    12 components up to hexane including O_2 and H_2.
④ helium version for natural gas with 3 modules:
    14 components up to hexane including O_2, H_2 and He
    (with two carrier gases).

The PGC 9300, therefore, provides the analytical data required for PTZ correction, including the calculation of the K coefficient as per GERG 88-S or AGA 8, while satisfying the requirements of custody transfer measurement.

Actually the versions ① to ③ are available. PTB approval is available for ① to ③ and pending for ④.

Measuring uncertainty

In compliance with custody transfer measurement requirements, the limits for the measuring uncertainty are:
Sup. calorific value, standard density: < ±0.25%
Carbon dioxide content: < ±0.3 mol%
These values include the uncertainty of the calibration gas!

Analytical computer

The new analytical computer has a touchscreen for easy and comfortable operation and for graphical display. It has a TCP/IP interface which also enables the operation by PC via the free program RMGViewGC.
An integrated data logger stores the analysis results for about 2 years and all chromatograms for one week.

Operating ranges

Custody transfer measurement can be performed in the following operating ranges (gas quality measuring device):

Component	Content (mol%)			
PGC	9301	9302	9303	9304*
Nitrogen	0- 20	0- 20	0- 20	0- 20
Methane	65-100	70-100	65-100	65-100
Carbon dioxide	0- 10	0- 8	0- 10	0- 10
Ethane	0- 15	0- 14	0- 15	0- 15
Propane	0- 5.5	0- 9	0- 9	0- 9
i-Butane	0- 4	0- 4	0- 4	0- 4
n-Butane	0- 4	0- 4	0- 4	0- 4
neo-Pentane	0- 0.08	-	-	0- 0.08
i-Pentane	0- 0.12	-	0- 0.12	0- 0.12
n-Pentane	0- 0.12	-	0- 0.12	0- 0.12
Hexane	0- 0.3	-	0- 0.3	0- 0.3
Oxygen	-	0- 5	0- 5	0- 5
Hydrogen	-	0- 5	0- 5	0- 20
Helium	-	-	-	0- 1

*planned

Standard density: 0.7 - 1.1 kg/m³
Superior calorific value: 7.2 - 15.5 kWh/m³

Features

All the features of the previous version PGC 9000 VC have been maintained for the PGC 9300. New features are:

• Helium can be used as carrier gas for all applications, also for hydrogen measurement.

• Modbus and Ethernet interface.

• 20 digital inputs, 12 digital outputs, 8 analog inputs, 4 analog outputs (extendable via external module).

• Customer-programmable screen for quick access to the 20 most interesting parameters or measured values.

• User archive with 20 freely programmable measured values.

• Windows based operating software RMGViewGC with functions like
  - viewing, changing and exporting parameters (to MS-Excel)
  - parameter report editor
  - displaying and saving chromatograms.

• Help texts in the analytical computer.