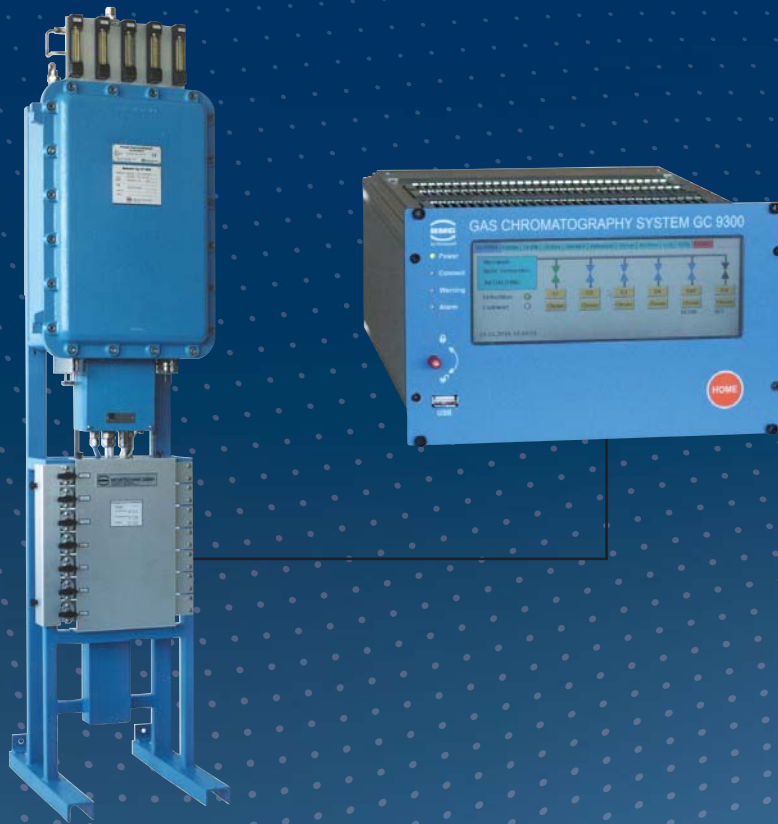


Process Gas Chromatograph PGC 9300



PRODUCT INFORMATION

Reliable Measurements of Gas



PROCESS GAS CHROMATOGRAPH PGC 9300 FOR NATURAL GAS AND BIOGAS

Measurement of gas quality including oxygen and hydrogen

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 O₂ and H₂.
- ③ C6 version for natural gas/biogas with 3 modules:
12 components up to hexane including O₂ and H₂.
- ④ helium version for natural gas with 3 modules:
13 components up to hexane including O₂, H₂ 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.

The versions ① to ④ are available, each one with PTB approval.

Measuring uncertainty

In compliance with custody transfer measurement requirements, the limits for the measuring uncertainty are:
Sup. calorific value, standard density: $\lt; \pm 0.25\%$
Carbon dioxide content: $\lt; \pm 0.3 \text{ mol}\%$
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- 25
Methane		65- 100	70- 100	65- 100	55- 100
Carbon dioxide		0- 10	0- 8	0- 10	0- 12
Ethane		0- 15	0- 15	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	-	to n-Butane*	to n-Butane*
i-Pentane		0- 0.15	-	0- 0.15	0- 0.3
n-Pentane		0- 0.15	-	0- 0.15	0- 0.3
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

* neo-Pentane is added to n-Butane which is displayed as sum.

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.
- Programmable trend display.
- 1-click bake-out function via controller.