



protects people and the environment by the safety of components, systems and plants.







Modular Gas Analyzer MGAnano VG-4



To remain competitive, today's refiners must employ all optimization and product control techniques available. The use of online physical property analyzers is one of the key features to reach those objectives because they measure important quality properties in the process directly.

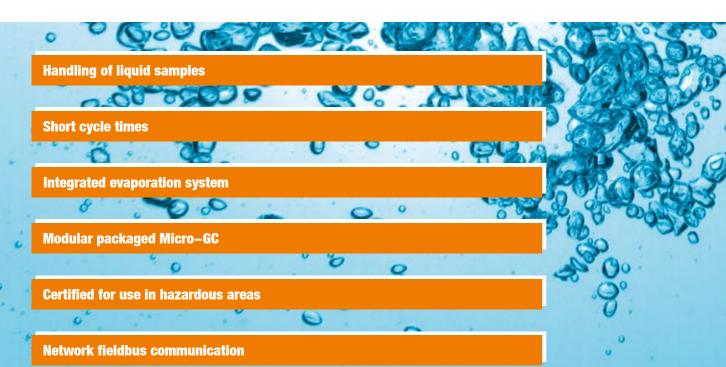
Gas chromatography (GC) is a common method used in analytical chemistry for separating and analyzing compounds that can be vaporized without decomposition. Typically the method is used to separate different analytes of a mixture and to determine their concentrations. Based upon these concentrations other parameters of a mixture can be calculated such as calorific values, Wobbe Index, theoretical vapor pressure etc.

BARTEC BENKE

Your partner for innovative system solutions.



The BARTEC BENKE specialists have many years of experience. They create system solutions that you can rely on: efficient and dependable for decades to come.





- Liquid sample handling
- Integrated automatic evaporation and mixing unit
- Available communication interfaces:
 Modbus/RTU, Modbus/TCP (bidirectional) - Remote access via Ethernet (VDSL or FOC is)
- Short cycle times

Norms and Standards:

Correlates with:

- ASTM D3588
- **DIN EN ISO 6976**

APPLICATION

The BARTEC BENKE Modular Gas Analyzer MGAnano VG-4 is used for:

- Blending terminals: To optimize pipeline & terminal blending and to determine Wobbe index, calorific values and relative density alterations/optimization, vapor pressure alterations through butane or other diluents
- Liquefied gas: Pipeline & terminal blending for e.g. propane traders, Wobbe index, calorific values and relative density alterations through N_a ballasting, ballasting through other gases, NGL extraction from LNG

Make your decision for a strong partner!

Choose BARTEC GROUP also for:

- **Fast Loop Systems**
- Sample Conditioning Systems
- Validation Systems
- Recovery Systems
- Chillers
- Air Conditioning Systems/HVAC
- Pre Commissioned Analyzer Shelters/ **Turn-Key Solutions**

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EXPLOSION PROTECTION

Marking ATEX: II 2 G IIC T4 Gb CSA C/US pending

TECHNICAL DATA

Technology Gas chromatography (GC)

Variants 1: 1x micro GC module for gaseous

sample only

2: 2x micro GC modules for gaseous

sample only

3: 1x micro GC module + evaporator unit for

liquid sample only

Measuring range 0.01 to 100 %, depends on application

Repeatability ≤ 1.0 % full scale **Measuring cycle** discontinious.

cycle time depends on application

typically: 3 min

Electrical data

Nominal voltage 230 VAC ± 10 %, 1 phase; 50 Hz;

other ratings on request

operation 170 W/max. 550 W **Power consumption**

Pre-fuse 16 A

Protection class IP 54 (NEMA 13)

Ambient conditions

Ambient temperature operation 5 to 40°C (41 to 104°F)

storage 0 to 60°C (32 to 140°F)

Ambient humidity 5 to 80 % relative humidity,

non-corrosive

Sample

Quality filtered 2 µm, dry

gas: not condensed, H2S max. 2000 ppm

liquid: density (15°C/60°F) 590 to 690 kg/m³

gas: 5 to 50 NI/h Consumption

liquid: 1 to 10 I/h

(< 10 bar (145 psi) on request)

Pressure at inlet 1.5 to 2 bar (21.8 to 29 psi) **Temperature at inlet** 5 to 50°C (41 to 122°F)

Utilities

Instrument air

Consumption

Purge 8 Nm3/h while purging (~12 min)

Operation approx. 1 Nm3/h

Pressure at inlet 4 to 7 bar (60 to 100 psi)

Quality humidity class 2 or better acc. to ISO 8573.1

GC carrier gas

Type Hydrogen, Helium, Argon

Consumption 0.03 to 0.3 NI/h

Pressure at inlet 2 to 7 bar (30 to 100 psi) 99.999% or better Quality

Evaporator carrier gas

Type Hydrogen, Helium, Argon, Nitrogen

Consumption 1 to 60 NI/h

Pressure at inlet 3 to 10 bar (45 to 145 psi) Quality 99.999% or better

Signal outputs and inputs

Analog outputs on request

Digital outputs Alarm, Ready signal, see options

Digital inputs Reset, see options

Electrical data of signal outputs and inputs

Analog outputs max. 8 (4 to 20 mA; 1000 Ω)

active isolated on request

Digital outputs 24 VDC; max. 0.5 A

Digital inputs high: 15 to 28 VDC / low: 0 to 4 VDC

Auxiliary power

supply output 24 VDC; max. 0.8 A

Control unit

Central control unit Industrial PC

Operating system Windows Embedded Standard 7®

Control software PACS

User interfaces

TFT display with touch function **Display**

1024 x 768 pixel

virtual keyboard, controlled via Keyboard

TFT display with touch function

Connections

Tube fittings Swagelok® 6 mm/12 mm/18 mm

other fittings on request

Vent/Drain open to atmosphere

backpressure on request

Weight and dimensions

Weight approx. 280 kg

Dimensions (W x H x D) approx. 1140 x 1900 x 710 mm **Space requirements**

right: 500 mm / left: 500 mm /

front: 1000 mm

Optional interfaces

Analog outputs on request

MODBUS interface MODBUS/RTU via RS485 or RS422

or FOC is, MODBUS/TCP via FOC is

Remote access via Ethernet (VDSL or FOC is)

Important notice MGAnano VG-4 is subject to continuous product improvement, specifications are preliminary and may be subject to change without notice. If your technical data do not comply with existing data, please contact us for technical clarification.