

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



Process Analyzer
Modular Gas Analyzer MGAnano VG-4

Credible Solutions for the Oil and Gas Industry

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.

Handling of liquid samples

Short cycle times

Integrated evaporation system

Modular packaged Micro-GC

Certified for use in hazardous areas

Network fieldbus communication



Special Features:

- Modular packaged Micro-GC MEMS technology
- 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 MGA nano 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 N₂ 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



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 discontinuous, cycle time depends on application typically: 3 min

■ Electrical data

Nominal voltage 230 VAC ± 10 %, 1 phase; 50 Hz; other ratings on request

Power consumption operation 170 W / max. 550 W
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

Consumption gas: 5 to 50 NI/h
liquid: 1 to 10 l/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)

Quality 99.999% or better

■ 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

Display TFT display with touch function
1024 x 768 pixel

Keyboard virtual keyboard, controlled via
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
via Ethernet (VDSL or FOC is)

Remote access

Important notice MGA nano 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.