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.

**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 N₂ ballasting, ballasting through other gases, NGL extraction from LNG

**Capabilities**

- Handling of liquid samples
- Short cycle times
- Integrated evaporation system
- Modular packaged Micro-GC
- Certified for use in hazardous areas
- Network fieldbus communication
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

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
**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**
- \( \leq 1.0 \% \text{ full scale} \)

**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 Nl/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

**Evaporator carrier gas**

**Type**
- Hydrogen, Helium, Argon, Nitrogen

**Consumption**
- 1 to 60 Nl/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
- MODBUS/TCP via FOC is

**Remote access**
- Via Ethernet (VDSL or FOC is)

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**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.